MINING & PETROLEUM STANDARD

AND

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PETROLEUM.

THE CANADA OIL REGION.

The popular insight into the geological mysteries of mineral oils, is yet as limited as the world is in its knowledge with regard to their utility and practical treatment. The notion that they are confined to a few narrow districts reached only at certain depths, and therefore exhausted when the wells at those depths cease yielding, has already been exploded. The experience of practical oil operators have demonstrated that extensive veins or pockets of oil are found at various depths. Those nearest the surface may sometimes fail, but deeper drilling in the failing wells will almost invariably open a new source. The deposits of oil reached at Oil Springs are found at various depths from 14 to 1000 feet. As a general thing after sinking a shaft 40 to 80 feet below the surface, passing first through a dusky yellow and then to a bluish and very tenacious clay, a layer of black sand, gravel or shales of a few feet in depth is met with, resting on the crown of the limestone rock. Near this rock and amidst the sand and shales, and often at intervales in the rock, boulders of various sizes are encountered to the great annoyance of the workman, and sometimes causing the destruction of the drill. This layer of sand and shales is supposed to be the receptacle of the oil exuding from the rock, and is the source of the surface oil which is believed to abound in all this region. On drilling, the rock oil is sometimes found at a distance of from four to ten feet, but deep boring, say from 300 to 500 feet, seldom fails to open a rich vein. One well has been sunk to the extent of 800 feet, and a very pure oil reached. Another has been drilled to the depth of 1001 feet with similar success; though excellent veins have been reached at two and three hundred feet. It is the accepted theory of oil operators here that the deeper in the earth petroleum is found, the more pure is its quality. As it ascends towards the surface, driven in devious ways by the gas which it evolves, it becomes more impure through admixture with the earthy matter with which it comes in contact until finally when it is exposed to the sun and various atmospheric influences, it is converted into bituminous pitch, such as compose the gum-beds we have before alluded to.

The gravity of the Canada rock oil varies in different localities from 32 to 43 degrees, and the estimated per centage of refined from crude is from 66 to 75 per cent., while the gravity of the Pennsylvania oil is from 42 to 54 degrees, and its per centage of refined oil from 46 to 54.—*Ex. from Cor. Detroit Ad. & Tribune.*

[These statements of gravity and per centage are doubtless made opon the representations of Canadian refiners, many of whom obtain so large a per centage of refined (?) from crude as to very materially injure all Canadian oil in the market. We have yet to be convinced that Canadian oil is so far superior to Pennsylvania oil.—EDS. JOUR.]

A FLOWING WELL IN SOUTHERN CALIFORNIA.—Information has been received at Philadelphia from California, that at a depth of one hundred feet a well was flowing eighty barrels a day, on the estate of the Philadelphia and California Petroleum Company. And so it seems there is a flowing well in California.

THE GREAT BURNING WELL.

[Franklin (Pa.) Feb. 13, correspondence Meadville Republican.]

It has occurred to me that a detailed account of the Burning Well would be interesting to your readers. It is certainly one of the greatest curiosities to be found in the oil region. It yields in interest to none of the great phenomena found in other lands, and richly repays one for the trouble and fatigue in visiting it.

The well is situated on the eastern bank of the Alleghany, at the mouth of Mog's run, or, as it is sometimes called, Pine Hill run. The distance below Franklin is about twenty miles by the course of the river, or across the hills about twelve miles. The mode of travel by your correspondent was by the river, on the ice about half the distance, the remainder over the hills.

As you approach the region of the well the country becomes rough and romantic in the extreme. High hills and abrupt precipices are covered and overhung by immense masses of detached rock, that seem scattered at random on the hill tops and on the sides of the aclivities. If the glacial theory of Agassiz be correct, then the icebergs that were anchored here were thickly laden with mighty boulders from the North.—Be this as it may, the rocky masses are lying here in wonderful confusion. Before you approach the well near enough to see the flames your ears are saluted with the roaring sound similar to that which Ross Brown describes as peculiar to the Geysers in Iceland. It seems to be due chiefly to the rush of gas from the depths below, but may be in part from the flame itself as it rises high in the air.

Like most great curiosities, this well suffers from surrounding circumstances. There is no good object near with which it may be compared as to height. Added to this, the hills all around it are from six hundred to a thousand feet in height, affording as a background rocks and shrubs and stunted trees, that tend to diminish its effect on the eye and the imagination.

The well was of course bored for oil. It had reached a depth of five hundred feet, when the column of gas, that must be immense, rushed up and became ignited from the furnace of the engine. Soon, of course, the derrick, engine house and fixtures were consumed, and the engine itself a wreck. The top of the conductor, which emerges from the pit, being of wood, was burned off, when an attempt was made to fill up the pit with earth and extinguish the flames. This proved a failure as the pressure of gas was too great to be easily filled up. As it is seen at present, the gas rushes through the loose earth in a thousand jets, and the result is that a column of flame constantly emerges from the pit equal to its size, which is perhaps eight feet square.—This column rises to a height of from fifty to one hundred feet, varying every few seconds from the minimum to the maximum height. The pillar is not regular in form, but rough and jagged. Sometimes it is divided, and sends its tongues of flame out in every direction. As it reaches its greatest height, the top of the flame leaps off and is extinguished. This is the appearance in daylight. At night, surrounded by darkness, its appearance must be awfully grand and imposing. I am inclined to think there is some oil mixed with the product of the well, inasmuch as every three or four seconds a cloud of dark smoke rolls up with the flames, and is swept to its very summit, when it disappears. Some visitors compute the height at one hundred and fifty feet. This is probably correct at some periods, as the day I visited it the air was damp and unfavorable to its reaching its greatest height. The roaring sound is constant, and almost resembles the sound of distant thunder. The climate in the neighborhood is very mild and summer-like. The buds on the shrubs are expanding, and the grass as green and fresh as in April, while the very ice in the river has melted and disappeared.

The well has been burning about three weeks, with no apparent diminution in its power or quantity of its gas, so that at present it bids fair to afford light to the people for some time to come. Although the fire is surrounded on all sides by hills of such lofty proportions, yet at night the light is seen at a great distance. At Franklin it lights up the southern horizon with a bright tremulous glow. This light assumed a very strange appearance one evening last week. It was somewhat cloudy, and in addition to the usual ruddy glow, the light appeared to concentrate itself into a bright lance-like figure, about four or five degrees in length, that remained stationary about midway between the horizon and the zenith, where it continued all the evening.

WONDERFUL DEVELOPMENTS AT PITHOLE CITY, PA.—STRANGE PHENOMENA.—Thursday morning, as will be seen in another column, the Syracuse House, at Pithole, and the adjacent buildings, were destroyed by fire.—The firemen pumped all the water wells dry, to obtain water to extinguish the flames. This occurred at or before daylight. About eight o'clock, a man went to his well to draw some water, and upon applying the pump, he pumped up pure petroleum. Crowds soon collected, and the news fled from lip to lip. All day yesterday the pump was lifting out pure oil of (it is said) a heavier gravity than that of Pithole wells of greater depth. Presently the neighbors tried their wells, and with the same success. Hundreds of visitors were all day yesterday visiting these wells, and carrying away the oil in bottles, while men were busily at work barreling it in quantities. Springs in the neighborhood were dipped dry of water, when they too began to flow oil. Interests were inquired for and refusals taken before night. We get these facts from Mr. Stephenson, civil engineer, of our city, who says that he visited the spot, and although incredulous until he arrived on the spot, yet he saw all of the above and will be qualified to the same. He suggests as a possible solution that the Miller Farm pipes, which pass a few hundred feet from the spot, may have for sometime been leaking, and this may be the drainage from such leakage. If this be not the case, he is of the opinion that in the hill may crop a higher sand rock, and that those springs and wells, being at the proper level with reference to this rock, may, when exhausted of the water, received the flow of oil. We look for other and conclusive explanations as the matter is more fully investigated.—*Oil City Reg., Feb.* 8.

THE OIL PRODUCT FOR 1865.—The Petroleum production of the United states for 1865, is figured up at about 2,250,000 barrels of crude, nearly the same total as 1864. This indicates how great had been the falling off in the supply prior to the great Pithole yields. It shows an average daily yield for the year of scarcely one-half the present daily product of the great north-

western Pennsylvania Oil region alone. This section is now rated as follows per day:

	Barrels.
Pit Hole Creek,	6,300
Oil Creek,	4,000
Bennehoff Run,	1,500
Alleghany River,	900
Dennis Run, Hickory Creek, &c,	2,100
Sugar Creek,	200
Cherry Run,	450
French Creek,	30
Other locations,	250
	14,680

—The revenue commission recommend the repeal of the tax of one dollar per barrel on crude petroleum.—The commission are of the opinion that when the uses of all the elements of petroleum, and of the distillates of the oil-yielding coal and shale have been more fully developed, it will be possible for the Government to derive a moch larger revenue from these articles with a much lower rate of excise than is now imposed. For the next fiscal year, the commission believe that a revenue in excess of $3,000,000 may be relied upon from refined coal oil and petroleum.

MINING.

COLORADO GOLD AND SILVER.

There is at present a strengthening conviction, that the real value of the metaliferous rock of Colorado is not fairly appreciated, or rather that the mishaps of the pioneer mining associations do not afford a reason for a conclusive judgment against the feasibility of Colorado mining. Heretofore, operations in Colorado have been confined to the auriferous rock, but lately it has become apparent that the territory possesses silver mines equal to those found elsewhere. The silver veins have been found chiefly in Clear Creek and Summit counties, the former differing from the latter in its argentiferous character, as Reese River differs from Washoe. Those in Clear Creek were discovered late in the fall of 1864. In May, 1865, prospecting was commenced and carried on through the summer, and resulted in the discovery of large numbers of lodes of argentiferous galena and chloride of silver. Among these are the Wheeling, the Belmont, the Savage, the Tellier, the Baker and others, none of those named running less by assay than $400 to the ton of ore, and the first two averaging from a half dozen assays more than twice that sum. No mining has as yet been done.

Mr. Samuel Bowles, of the Springfield *Republican*, made an extended tour last summer through the mining regions of the Rocky Mountains and the Pacific coast. As an intelligent observer, candid in his statements, his opinions are worthy of consideration. He says, speaking of gold mining: "Looking back over our mining experience, and taking the average testimony of each district as equally trustworthy, I find myself impressed with the superior richness of the Colorado gold mines. Their ore averaged as near $100 a ton as that of either Nevada, Austin or Virginia, or of California, does $50. The extraction is not as complete, because of the more intricate nature of the precious deposits; but means to overcome this, though of course at enlarged cost, seemed to us successfully initiated while we were there, and we hear, have since been perfected."

Beyond all dispute, the proportion of precious metal in the Colorado quartz is wonderful. A resident of the territory, writing in the New York *Tribune*, makes the following assertions, which, though apparently exaggerated, can all be substantiated:

"Now, in respect to the richness of these ores, they have been tested a thousand times, in the rude pan of the prospector, the mill of the miner and the labratory of the chemist, and with but one result—a yield of gold so great as to render it certain that the quartz veins of Colorado are the richest in the world. In Europe veins that do not yield to exceed $12 per cord are worked and made to pay, in Nevada and California $40 pays to work, while in Colorado, no lode is considered worthy of record that will not pay one-half more than this, while a great part of them readily yield, under the present imperfect process, from $100 to $300 per cord. I could mention a hundred of this character.

"Another fact to be noticed in this connection is that although our deepest mine will not exceed 550 ft. yet the number of those sunk from 200 to 400 feet is such, and the testimony furnished so uniform, that it is now indisputable, that the ore invariably grows richer in proportion as the shaft is sunk deeper; and further, that all lodes whose top or surface ore pays well, will yield rich ore when sunk upon."

COPPER MINING IN VERMONT.

In the primitive formations which characterize the geology of Vermont, various ores are found. In serpentine rock in the northern part of the State, chromic iron occurs, and further exploration may establish as a fact that this important metal exists in sufficient quantities to pay for working it. Copper mining is prosecuted with considerable vigor. It would seem that the promise of the large Orange county vein or beds would be realized. Elsewhere workings on the veins have not been successful. The metal produced from the ore is of excellent character, and of remarkable toughness and malleability. The Corinth Copper Mining Company began operations in 1854, and employs 200 men. The ore is a sulphuret of iron and copper, having 27 per cent. of the latter metal. In 1853, the Vershire Copper Mining Company, with a capital of $500,000 was incorporated. Along the extent of the Company's mines there is a large bed of copper pyrites from 8 to 16 feet thick; the ore sent to market averages from 9 to 10 per cent. pure copper. This Company have reached a depth of 315 feet in their bed, and employ 100 hands. The Company formerly shipped some ore to England to be smelted, but the ore is now all reduced in the United States. At the Stafford copper mines 70 men are employed. At the Pine Hill works, also in Orange county, about twenty teams are employed in drawing the ore.

ATMOSPHERIC PRESSURE IN REGARD TO ALTITUDE.

Until now, says Galignani, the only researches made at considerable depths tended to fix the law of temperature in regard to altitude. Mr. Simonin has now published a series of experiments for the purpose of ascertaining the increase of atmospheric pressure under similar circumstances. As this increase has generally been found to be 1 millimetre for every 10 metres as we descend, it remains to be seen whether the same would be the case in the shafts of mines where the air confined in narrow space, is at the same time exposed to the action of a powerful draft, and more or less impregnated with steam, and at variable temperatures.—Operating in very deep shafts, our author had the opportunity to bring the barometer below the level of the sea. His experiments were conducted in the basin of the Saone and Loire, where the coal pits of the Creuzot and Epinac are situated. The shafts are here 400 metres deep, and since the average reading of the barometric altitudes at the orifices is about 355 meteres above the level of the sea, Mr. Simonin must have operatrd at a clear depth of 45 meters below the level.—From his observations, it appears that at Epinac, as regards temperature, there is an increase of 1° centigrade for every 50 metres of vertical descent; and as regards pressure, a rise of 1 millimetre in the barometer for 11° of vertical descent. At the Creuzot there was an increase of 1° in the temperature for every 40° of vertical descent, and an increase of 1 millimetre for every 10 metres. The averages, therefore are: For temperature. 1° for 45 metres; and for pressure, 1 millimetre for 10½ metres. Mr. Simonin has taken care to operate only on shafts through which pure air enters; for the air that leaves the mine is vitiated, and unduly heated from various causes. The shaft should also be water-tight, and the woodwork as much as possible free from decomposition by fermentation.

NEW CRUSHING MACHINERY IN THE LAKE SUPERIOR COPPER REGION.

The principal attraction to the mining man visiting the "Houghton-Ontonagon" district at present is the crushing machinery which is being tried by the Minnesota and Huron Mining Companies. The subject of crushers has been one which has agitated the minds of mining men ever since legitimate operations were commenced on Lake Superior, but never until the present time was there any one found bold enough to kick clear of the traces formed by universal custom and give them a fair trial. Circumstaces at last rendered it necessary that a bold move should be made by the Minnesota Mining Company. The unprecedented amount of mass copper taken from the mine, had almost warranted the belief that the supply was inexhaustible, but it finally became so much reduced that it was absolutely necessary to provide other means for keeping up their product. A valuable stamp lode was on the property but a short distance from the old mine, which could be worked from the openings already provided, but they had not water enough for stamping purposes, and must either take their rock a mile and a half below to the river, or try the crushers. A building has been erected very well suited to the purpose, although it looks rather small to contain so much machinery, and everything put into position as rapidly as possible. It was altogether new; no similar work had ever been done in the country; there was no chance to avoid the defects and profit by the example of others, and it has been well done. The machinery was procured from Hodge & Christie's foundry in Detroit, and the rock-breaker is a patent of Mr. Hodge's. It was not in operation at the time we were there, but from the evidence of parties who have witnessed its operation, and from the rock at hand, which has passed through the machine, we should judge that its principal fault lies in not breaking fine enough. We noticed pieces of 8 and 10 inches in length and 3 or 4 in thickness, which are much too large for the rollers. To obviate this for the time being, a Blake's breaker has been set up, and into this the larger pieces are thrown before reaching the rollers. The different sets of these machines are each furnished with sieves which allow the fine dirt to pass through on to the washers, and conducts that too coarse for this purpose on to the next set below. After passing through all the machine, if any is left still too coarse, it is taken up and thrown back. Those who have seen them work seem to be well satisfied with their operation and claim that they are a success.

At Huron the rock-breaking machinery is in operation, and fully meets the expectations of the agent, who is entitled to the credit of planning and putting up the entire work. The building in which is located the breaking machinery, is about 200 yards from the nearest shaft, and is connected with the building which is to contain the crushing machinery by a railroad, which passes under the shutes of the breakers and runs into the top of the other building. The machinery consists of a steam hammer, two large and two small size Blake's breakers, and two pairs of corrugated rollers. The rock comes from the mine into the upper story of the building where is located the steam hammer, and all large rocks are subjected to its action. It works upon the same principle as Ball's stamps, and requires but a few well-directed blows to break the largest rock, however well it is tied together with copper. The entire amount of rock is then passed into the large breakers and through them by a shute into the smaller size below, and again by another shute into the crushers. They consist of corrugated rollers about three feet in diameter, which turn towards each other, with about an inch of space between the outside surface of the corrugations, which can be increased or diminished at pleasure. The rock is broken into pieces of not to exceed two inches square, and the only limit to the capacity of the machine, seems to be the capacity to feed them. They make 120 revolutions per minute, and are rigged with powerful steel springs which give and allow the copper to pass through; as all the large pieces of copper are assorted above, there will be no difficulty arising from allowing the rock to pass through

at the same time. Since we were at the mine we understand that one set of the smooth rollers have been set up in the same building with the crushing machinery, and are working to a charm.

Should this machinery prove successful, (and there is every reason to believe it will,) it will open a new field of mining operations, and our much abused Ash Bed will be second in value to no mineral deposit in the country, and the Amygdaloid belts on the south side of the Greenstone will be opened and worked upon at profits not dreamed of before the era of crushers.—*Kewanee Times, Feb. 3d.*

A Rich Assay.—Every new test but confirms us in our oft expressed conviction of the almost fabulous richness of the Utah silver mines. We recently witnessed assays of ores from the surface of four ledges in Rush Valley, 38 miles from this city, which yielded from one to six hundred dollars per ton. The ore was argentiferous galena. When we consider that millions of tons of such ores—easy of access—is the prize which awaits the capitalist, we can form some idea of the vast wealth and power that will, at no distant day, be here concentrated.

The above is taken from the *Daily Union Vedette*, a well informed little sheet published at Salt Lake City, of date January 26.

GAS.

TURNING WASTE GASES FROM BLAST FURNACES TO COMMERCIAL ACCOUNT.

To Thomas Horton, of Priors Lee Hall, Shropshire, and David Simpson Price, of Great George-street, Westminster, for improvements in the treatment of certain products obtained in the smelting of iron. [Dated 2d March, 1865.]

This invention relates to certain means for turning to commercial account various products obtained in or arising from the use of coals in blast furnaces employed in smelting iron.

Various arrangements are employed for conveying the gases commonly known as the waste gases from a blast furnace. One mode is by a wrought-iron tube communicating with upper part of the blast furnace. This tube is connected with the main tube or conduit, which leads to the proximity of those places where the gases are required. These gases are then conveyed away from the main tube or conduit by branch pipes of smaller diameter, to the air stoves, boilers, or other apparatus where their combustion is effected, and whence the products of combustion pass away by a lofty chimney, that aids the draft of the blast furnace, and assists the passage of the gases.

Now, in place of allowing the waste or destruction of the condensible products of distillation, which these gases contain, the patentees propose to separate, collect, and utilize them.

With a view to this, water is injected in a fine spray into the wrought iron tube above described, by preference near to its junction with the mouth of the furnace, and so much of the main tube or conduit as is practicable is placed in a trough through which a stream of cold water is caused to flow, the water entering at the end of the trough farthest removed from the furnace, and traveling towards the opposite end—the water thus partially or wholly surrounding the pipe or conduit. This water may subsequently be used for quenching coke, or feeding boilers.

This main tube or conduit is in communication with vertical condensing pipes or mains, and should dip or incline slightly so as to admit of the condensed products being collected. The mode of effecting this collection must depend upon the position in which the vertical condensing pipes are placed. Should these be in connection with the branch pipes, an outlet must be made at the end of the main tube, where the products can be run off and collected. The best position for the vertical condensers or mains for condensing the products is is in connection with the branch pipes, which lead from the main tube to the heating stoves, boilers, or elsewhere, on account of the greater facility afforded for condensation, from the diameter of these branch pipes being considerably less than that of the main tube.

These vertical condensers or mains are connected with an air-tight box or cistern, similar in arrangement to those employed in the condensing apparatus of gas works, and in which the condensed products of distillation are collected.

Where the draught is sufficiently powerful, or where auxillary means can be employed for overcoming pressure, scrubbers or coke columns, through which water or acidified water passes, or other similar contrivances, may be added to the above described arrangement, with a view to the more complete absorption of the ammoniacal products contained in the gases above mentioned.

The patentees claim, "Frst,—the collecting of the condensible hydrocarbons and other condensible products contained in the the gases emitted from blast furnaces where coal is wholly or partially used, as described.

"Second,—the collecting of the ammoniacal products contained in the gases emitted from blast furnaces where coal is wholly or partially used, as described."

ASBESTOS.

The following account of asbestos is taken from the *Le Journal de L' Eclairage du Gaz:*

During some time past great use has been of abestos in machines for heating by gas. This substance was already known to the ancients, who used it, and who, carried away by their love for the marvellous, have enriched its history with such a host of fables, that this mineral acquired a celebrity which has been transmitted to our day.

Asbestos is found in masses in certain primitive rocks—it is of a fibrous nature, and its surface often silky in appearance. These fibres possess very little cohesive power, and resemble the filamentous prôducts of the vegetable kingdom. It was this texture which deceived the ancients. "This linen," writes Pliny, "grows in the desert of India, always arid and scorching—thus the climate where it is produced accustoms it to the action of fire. As the asbestos is not affected by fire, so it resists the influence of charms and evil spells. At banquets I have seen napkins of this linen thrown into a hot fire; when the grease and scraps have been consumed by the fire, the napkins have been removed more pure and bright than if they had been washed in water. Of this material are made shrouds for the obsequies of kings." In fact the ancients spun asbestos, making sheets, napkins, head-dresses, etc., which were thrown into the fire when soiled, coming forth white, the foreign matter being destroyed without altering the texture.

The Greeks and Romans thus made winding sheets for burning the bodies of illustrious persons and recovering the ashes free from every admixture. There was found in Rome, in 1702, a funeral urn containing a skull with the bones burnt and the ashes enclosed in a cloth of asbestos, measuring nearly two metres in length—72 in.—by 1 m. 60 c.—57 6-10 inches—in breadth.

The ancients manufactured from this material incombustive wicks, and when those became encrusted with oil they were plunged into a burning furnace to cleanse them.

In our day asbestos has been made serviceable in a variety of ways. It has been manufactured, as of old, into incombustible cloths; in order to do this, fibres of linen or cotton have been intermingled with fibres of asbestos, and the fabric submitted to the flame which destroys the vegetable fibres, and thus is obtained a cloth of pure abestos. This proceedure has been abandoned, as the cloth produced is loose and coarse in texture.

In Italy has been discovered a precious variety of asbestos, the threads of which, of a shining whiteness, have the peculiarty of seeming to be wound up in the mineral mass which they form as the silk in the cocoon from which it is drawn. If one of the ends of these mineral fibres is siezed it can be drawn out to a length eight to ten times the size of the piece from which it comes. The thread is used to make cloth and even lace, but unfortunately these tissues possees too little solidity to be of service. Incombustible paper and card board are also made of abestos, of such a character that by using ink properly prepared, for instance of peroxide of manganese and sulphuret of iron, the most precious writings can be harmlessly exposed to the action of fire. Madame Perpenti has presented to the Institute an entire work printed on asbestos paper.

The inhabitants of the Pyrennees manufacture purses and garters from asbestos, which they sell to the curious who visit their mountains. In Siberia, also, similar articles are made. Aldini has made clothes from this mineral to protect firemen from the action of the flames.

Asbestos is composed of several metallic oxides—lime, magnesia and alumina, united to silicic acid. Chevenix gives the following analysis:

Silica,	59
Magnesia,	25
Lime,	9
Alumnia,	3
Water, Iron, loss, etc.,	4
	100

The different analyses made by Thomson, Berthies Schmidt, Delesse, have given almost the same result.

Asbestos is widely spread in nature. It is found abundantly in Savoy, Piedmont, Tyrol, Hungary, Corsica, Colony of Cape of Good Hope, at Nerwinski, in Siberia, and in America, in the State of New York.—It also occurs in large quantities in Scotland, and in the Alps and Pyrenees.

There exist numerous varieties of abestos—the Luberiform Asbestos, or *Asbestos tressi*, of Hauy is softer than the others—it imbibes water more readily—its ordinary colors are a dirty gray and a yellowish white—sometimes it is in thick and spongy pieces, it is then called vulgarly, *mountain flesh*—sometimes nearly the texture of cork, then it is *mountain cork*—again it is hard and membraneous, called *mountain leather*, or membraneous and very flexible, when it is called *mountain paper*.

In the neighborhood of Alais, the Luberiform asbestos is found on the surface of the earth, in white and elongated pieces, which were for a long time mistaken for human bones. Ligniform asbestos, or *mountain wood*, of Brochant, is of a reddish or brownish color, and resembles splinters of wood.

The asbestos of Savoy, on the contrary, is silky and white as fine linen. Corsica yields a variety less beautiful, but of remarkable abundance. Dolomieu used it for packing minerals.

In the new gas machines, use is made of these different varieties according to the effects it is desired to obtain.

Gas Explosion.—An explosion of gas took place on Tuesday evening, 20th ult., at the house of Dr. King, No. 2 Grove street, in this city. The shock proceeded from the front basement, tore off all the plastering in the dining room and hall, shattered the furniture almost to pieces and burst through the ceiling into the front parlor, throwing Dr. King and a lady who happened to be sitting there a considerable distance. It burst the back door of the basement with such force that it was completely smashed, and scattered the fragments over the yard. A little boy was in the yard was struck by one of the flying splinters, but, strange to say, neither he nor any one in the house was seriously injured. The cause of the explosion is attributed to leakage of the gas metre. Loss $1,000.

Gas Purifaction.—Experiments are being now made at the Crystal Palace District, and other gas works, to test the practical value of a recent discovery by Dr. Letheby, who, besides his many other engagements, is now consulting engineer to several gas companies. He had found that the waste material of the soda manufacture, and known as "soda waste," is unexpectedly effective in absorbing the sulphur compounds in crude coal gas, and especially the obstinate bisulphide of carbon. The soda waste is employed in the purifiers in layers, as much as oxide of iron is now generally employed to arrest the sulphuretted hydrogen.

MERCANTILE DIARY

FOR THE NINETEENTH CENTURY.

Explaining at one view the Day of the Week, on which any given Day of the Month of the present Century has fallen, or will fall.

By H. ANDERSON, M.D.

Entered according to Act of Congress in the year 1862, by H. ANDERSON, in the Clerk's Office of the District Court of the United States, for the Southern District of New York.

THIRTY-EIGHT YEARS, 1st half of the Century.	Jan. 31	Feb. 28	Mar. 31	April 30	May 31	June 30	July 31	Aug. 31	Sept. 30	Oct. 31	Nov. 30	Dec. 31	THIRTY-SEVEN YEARS, last half of the Century.
1801, 1807, 1818, 1829, 1835, 1846,	4	7	7	3	5	1	3	6	2	4	7	2	1857, 1863, 1874, 1885, 1891,
1802, 1813, 1819, 1830, 1841, 1847,	5	1	1	4	6	2	4	7	3	5	1	3	1858, 1869, 1875, 1886, 1897,
1803, 1814, 1825, 1831, 1842,	6	2	2	5	7	3	5	1	4	6	2	4	1853, 1859, 1870, 1881, 1887, 1898,
1805, 1811, 1822, 1833, 1839,	2	5	5	1	3	6	1*	4	7	2	5	7	1850,* 1861, 1867, 1878, 1889, 1895,
1806, 1817, 1823, 1834, 1845,	3	6	6	2	4	7	2	5	1	3	6	1	1851, 1862, 1873, 1879, 1890,
1809, 1815, 1826, 1837, 1843,	7	3	3	6	1	4	6	2	5	7	3	5	1854, 1865, 1871, 1882, 1893, 1899,
1810, 1821, 1827, 1838, 1849,	1	4	4	7	2	5	7	3	6	1	4	6	1855, 1866, 1877, 1883, 1894,
TWELVE LEAP YEARS, 1st half of the Century.	**31**	**29**	**31**	**30**	**31**	**30**	**31**	**31**	**30**	**31**	**30**	**31**	**THIRTEEN LEAP YEARS, last half of the Century.**
1804, 1832,	7	3	4	7	2	5	7	3	6	1	4	6	1860, 1888,
1808, 1836,	5	1	2	5	7	3	5	1	4	6	2	4	1864, 1892,
1812, 1840,	3	6	7	3	5	1	3	6	2	4	7	2	1868, 1896,
1816, 1844,	1	4	5	1	3	6	1	4	7	2	5	7	1872, 1900,
1820, 1848,	6	2	3	6	1	4	6	2	5	7	3	5	1876.
1824,	4	7	1	4	6	2	4	7	3	5	1	3	1852, 1880,
1828,	2	5	6	2	4	7	2	5	1	3	6	1	1856, 1884.

1	2	3	4	5	6	7
Monday..... 1	Tuesday..... 1	Wednesday.. 1	Thursday.... 1	Friday..... 1	Saturday.... 1	Sunday..... 1
Tuesday..... 2	Wednesday.. 2	Thursday.... 2	Friday..... 2	Saturday.... 2	Sunday..... 2	Monday..... 2
Wednesday.. 3	Thursday.... 3	Friday..... 3	Saturday.... 3	Sunday..... 3	Monday..... 3	Tuesday..... 3
Thursday.... 4	Friday..... 4	Saturday.... 4	Sunday..... 4	Monday..... 4	Tuesday..... 4	Wednesday.. 4
Friday..... 5	Saturday.... 5	Sunday..... 5	Monday..... 5	Tuesday..... 5	Wednesday.. 5	Thursday.... 5
Saturday.... 6	Sunday..... 6	Monday..... 6	Tuesday..... 6	Wednesday.. 6	Thursday.... 6	Friday..... 6
Sunday..... 7	Monday..... 7	Tuesday..... 7	Wednesday.. 7	Thursday.... 7	Friday..... 7	Saturday.... 7
Monday..... 8	Tuesday..... 8	Wednesday.. 8	Thursday.... 8	Friday..... 8	Saturday.... 8	Sunday..... 8
Tuesday..... 9	Wednesday.. 9	Thursday.... 9	Friday..... 9	Saturday.... 9	Sunday..... 9	Monday..... 9
Wednesday.. 10	Thursday.... 10	Friday..... 10	Saturday.... 10	Sunday..... 10	Monday..... 10	Tuesday..... 10
Thursday.... 11	Friday..... 11	Saturday.... 11	Sunday..... 11	Monday..... 11	Tuesday..... 11	Wednesday.. 11
Friday..... 12	Saturday.... 12	Sunday..... 12	Monday..... 12	Tuesday..... 12	Wednesday.. 12	Thursday.... 12
Saturday.... 13	Sunday..... 13	Monday..... 13	Tuesday..... 13	Wednesday.. 13	Thursday.... 13	Friday..... 13
Sunday..... 14	Monday..... 14	Tuesday..... 14	Wednesday.. 14	Thursday.... 14	Friday..... 14	Saturday.... 14
Monday..... 15	Tuesday..... 15	Wednesday.. 15	Thursday.... 15	Friday..... 15	Saturday.... 15	Sunday..... 15
Tuesday..... 16	Wednesday.. 16	Thursday.... 16	Friday..... 16	Saturday.... 16	Sunday..... 16	Monday..... 16
Wednesday.. 17	Thursday.... 17	Friday..... 17	Saturday.... 17	Sunday..... 17	Monday..... 17	Tuesday..... 17
Thursday.... 18	Friday..... 18	Saturday.... 18	Sunday..... 18	Monday..... 18	Tuesday..... 18	Wednesday.. 18
Friday..... 19	Saturday.... 19	Sunday..... 19	Monday..... 19	Tuesday..... 19	Wednesday.. 19	Thursday.... 19
Saturday.... 20	Sunday..... 20	Monday..... 20	Tuesday..... 20	Wednesday.. 20	Thursday.... 20	Friday..... 20
Sunday..... 21	Monday..... 21	Tuesday..... 21	Wednesday.. 21	Thursday.... 21	Friday..... 21	Saturday.... 21
Monday..... 22	Tuesday..... 22	Wednesday.. 22	Thursday.... 22	Friday..... 22	Saturday.... 22	Sunday..... 22
Tuesday..... 23	Wednesday.. 23	Thursday.... 23	Friday..... 23	Saturday.... 23	Sunday..... 23	Monday..... 23
Wednesday.. 24	Thursday.... 24	Friday..... 24	Saturday.... 24	Sunday..... 24	Monday..... 24	Tuesday..... 24
Thursday.... 25	Friday..... 25	Saturday.... 25	Sunday..... 25	Monday..... 25	Tuesday..... 25	Wednesday.. 25
Friday..... 26	Saturday.... 26	Sunday..... 26	Monday..... 26	Tuesday..... 26	Wednesday.. 26	Thursday.... 26
Saturday.... 27	Sunday..... 27	Monday..... 27	Tuesday..... 27	Wednesday.. 27	Thursday.... 27	Friday..... 27
Sunday..... 28	Monday..... 28	Tuesday..... 28	Wednesday.. 28	Thursday.... 28	Friday..... 28	Saturday.... 28
Monday..... 29	Tuesday..... 29	Wednesday.. 29	Thursday.... 29	Friday..... 29	Saturday.... 29	Sunday..... 29
Tuesday..... 30	Wednesday.. 30	Thursday.... 30	Friday..... 30	Saturday.... 30	Sunday..... 30	Monday..... 30
Wednesday.. 31	Thursday.... 31	Friday..... 31	Saturday.... 31	Sunday..... 31	Monday..... 31	Tuesday..... 31

Explanation.—*To ascertain on what day of the week any given day of the month in the nineteenth century will fall, first find the year in the Table of Years, and run the eye along the intervening Columns of Months, until you meet the figure under the month you wish to know. Then go to the column of figures to the corresponding figure, you there find the week day. Viz.: To know on what day of the week the 20th July, 1850, will fall. Take the year 1850, thus marked *, it leads to figure 1 in the column of months in July, marked thus *. Run the eye down column 1 in the Table of Days, and you find it Saturday.*

MISCELLANEOUS.

HOW SHALL THE BED BE PLACED?

A Physician at Magdeburg, Dr. Julius von dem Fischweiler, just dead, asserts in his will, that his own great age, 109 years, is entirely to be ascribed to his constant habit of sleeping with his head towards the north, and the rest of his body coinciding as closely as possible with that of the meridian, that is with his heels to the south. From persisting in this habit the doctor considered that the iron contained in our system, finding itself in the direction of the magnetic currents which are constantly flowing over the surface of the globe towards the north pole, becomes magnetised, and thus increases the energy of the vital principle. Without at all understanding this, or assenting, we know well of persons who cannot sleep without the bed be placed north and south, and it may not be useless to inquire what the observations of others on this point have been. Persons who find themselves restless and unable to steep at night, might try the effect of changing the position of the bed.

An Instrument for Detecting Fire-damp in Mines.—A very ingenious and simple instrument has recently been invented for this purpose by Mr. Ansell, of the English Mint. Its action depends on the tendency which exists in gases and vapors to diffuse themselves through each other, notwithsianding the interposition of membranes or porous substances, etc. It consists of a small brass cylinder, one inch and a half long, and three-quarters of an inch internal diameter, and of a piston working freely within. Under the piston, and within the cylinder, is a spring, which, when pressed by the sinking of the piston into the cylinder, moves a hand upon a dial on the outer case—which has a plate of porous earternware at the back. When this instrument is brought into an atmosphere containing coal gas, the latter passes through the porous plate, and the air within the case being expended, the piston is forced into the cylinder to an extent which is indicated on the dial. Taken out of impure air, the effect will be reversed, and the index will move on the dial on the opposite direction, the exact amount of purity or contamination being indicated. It is clear that the instrument might easily be made to set a bell ringing, or give some other notice of danger from the presence of an explosive atmosphere. So far as trials of it had been made, it seems to work satisfactory.

A Vessel Propelled by Electricity.—Great curiosity has been excited at Cherbourg by a small vessel propelled by electricity. The inventor, a French engineer, has shown his discovery to the Marquis de Chasseloup Laubant, Minister of Marine. Another of the scientific questions has been submarine locomotion. Several trials have been made, but without much success. However, an Italian Engineer, Guglielmo Ginstiniani, has presented to the French government the model of a submarine boat. The French government has directed a special committee to examine and report upon the system.

Galactozyme.—Galactozyme, or galozyme, is the result of the fermentation of milk by means of yeast, and is used by the inhabitants of the Steppea of Russia as a sovereign remedy in phtisis. Cases are named where the patient gained considerably in weight by taking half a tumbler full night and morning; but the dose must be regulated by the peculiarities of the patient. Nor is it indifferent whether the fermentation is carried on to a greater or less extent.

Light as a Source of Motion.—From the experiments made by Prof. Thomson, of Copenhagen, on light as a source of motion, he calculates that the light of the sun would lift thirty-five billions of tons one billion of kilometers high per second, and that it would raise the earth twenty feet in the same time.

A Race of Dwarfs.—Some interest has been excited in Tennessee by the discovery of graves from eighteen to twenty inches in length. The recent operations of mining and oil companies have disclosed these curiosities, which it is said contain human skeletons, whose teeth are very diminutive, but evidently those of adults. General Milroy has deposited some of the bones in the Tennessee State Library, but could illicit no information from the inhabitants concerning these Lilliputian sepulchres except the fact that a large number of similar graves—perhaps thousands—have been found in the same county, and a like burial ground is at the mouth of Stone river, near Nashville. They were examined thirty years ago, and excited considerable comment at the time. Here is a rich and wide field for theorists to explore, and it is to be hoped our men of science will look into the matter at once. Are these the remains of the pigmies which we see upon the old Etruscan vases, who waged war against the cranes for many long years, and were finally defeated by their voracious enemies?

New York, Feb, 15, 1866.

	Bid.	Asked		Bid.	Asked
Copper Stock.			***Gold Stock.***		
Aztec	7		Benton	1	1¼
Bedford	1	1	Consol'd Gregory		28⅞
Boston	4½	5	Corydon	—	3
Caledonia, A. P.	10	12	Gunnel	3⅛	4⅛
Canada	3¼	4	Great Western	—	8
Carp Lake	3	5	Hope	—	9
Central	—	—	Isaac's Harbor	⅛	⅞
Columbian	—	24	Manhattan	—	9
Copper Falls		—	Mariposa	44	44¼
Clifton	—	$1	Montana	⅜	1
Dacotah	—	5⅝	New York	2⅛	3
Derby	⅞	1⅜	N. Y. & Nova Scotia	⅝	1⅜
Douglass	—	—	Quartz Hill	9⅛	10
Evergreen	18¾	20	Quicksilver M'g Co	81	82
Flint Steel River	12	13⅜	Rocky Mountain	—	10⅜
Frue	2¼	5	Smith & Parmelee	7	12
Grand Portage	—	—			
Hancock	12¾	14	***Coal Stocks.***		
Hamilton	—	6	American	93	100
Hilton	5	6	Ashburton	—	25
Hudson	1	2	Central	62	65
Huron	32	33	Cumberland	61	62
Indiana	8¾	9¼	Del. & Hud. Canal	206	208
Isle Royale			*Hampshire & Balt.	104	110
Keweenaw	—	6	Pennsylvania	213	215
Knowlton	7	10			
Lafayette	1	2	***Lead Stocks.***		
Manhattan	—	—	Bucks County	⅝	⅞
Mendota	—	—	Clute	1⅝	1¾
Merrimac	4¾	5¼	Erie	—	20
Minnesota	33	37	Macomb	3¾	5
New York, A. P.	2	3⅜	Placentia Bay	1¾	1¾
N. J. Consolidated	4	4¾	Sussex	⅜	⅞
Norwich	—	6	Wallkill	5¼	6
Ogima	5	6¼			
Ontonagon	3	4¼	***Iron Stocks.***		
Penn	—	11⅜	Copake	8	10
Providence	1¾		French Creek	⅝	1
Quincy	96¾		Teal Lake	4⅜	6
Reliance	1¾				
Rockland	12⅜		***Miscellaneous.***		
Superior	8¾		Rutland Marble	17	90
Sharon Consolidated	—		* *Ex. div.*		

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For information and purchase of rights, apply to A. DOISEY, Esq., Sole Agent, Box 2,180, Cincinnati, Ohio, or to H. P. GENGEMBRE, Pittsburgh, Pa.

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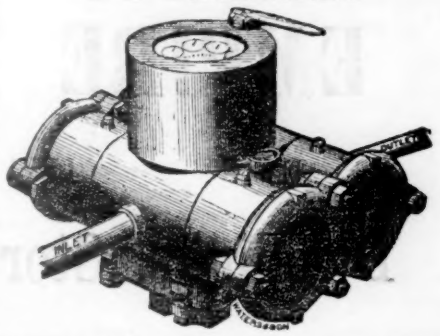

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ACCURACY, SIMPLICITY, and REMARKABLE DURABILITY with such ease and certainty of motion, as to offer no appreciable obstructions to the flow of water in the pipes to which it is connected, as it runs and registers upon three inches head, or when delivering the smallest stream. These qualities, with its low cost, have caused its extensive adoption by corporations and individuals, in many of our largest cities.

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H. Q. Hawley, Albany N. Y.

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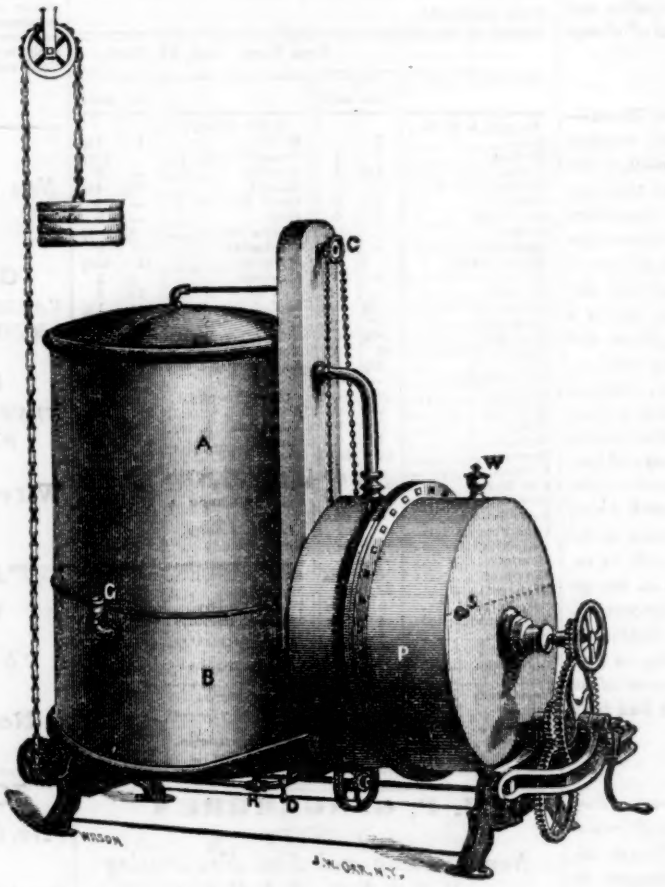
Is a mixture of the vapor of hydro-carbon with common air. The mechanical devices employed are such as, from a long experience and critical examination into the nature of the element brought into use, seem best adapted to secure a certain and satisfactory result. GASOLINE, the liquid employed, is the more volatile portions of Petroleum, of a specific gravity of 0.6587. This liquid exposed to the action of this machine is vaporized, and a close mechanical mixture of the vapor with common air is effected. The value of the gas produced, its permanency, its illuminating quality, and freedom from liability to condensation, depend almost entirely upon the perfect and uniform character of this mixture. Hence the great importance of mechanical means adapted to secure all the conditions requisite in a Portable Gas Machine.



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No. 1,	$150,	5 Argand Burners.	
do. 2,	250,	10	do.
do. 3,	350,	20	do.
do. 4,	450,	35	do.
do. 5,	600,	60	do.
do. 6,	1,000,	125	do.
do. 7,	1,500,	250	do.

This machine will produce the most brilliant and steady light, without Fire or Heat, and is warranted to operate in every respect as represented.

The EMPIRE STATE GAS MACHINE is the most SIMPLE and EFFECTIVE MEANS KNOWN FOR PRODUCING GAS WITHOUT HEAT.

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We warrant our Glycerine free from acid and not to corrode the Meter metal, or to congeal or freeze at a stated temperature—also, not to evaporate to any extent The advantages and savings derived from the use of our fluid can be testified by many Gas Light Companies which we have supplied. We only refer to the certificates of H. J. Miller, Esq., President of Cincinnati G. L. and Coke Co., and Dr. J. Lawrence Smith, Professor of Chemistry in the Louisville College, and President of the Louisville Gas Co.

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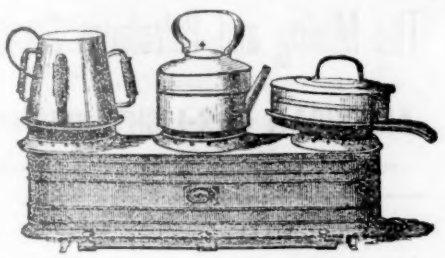

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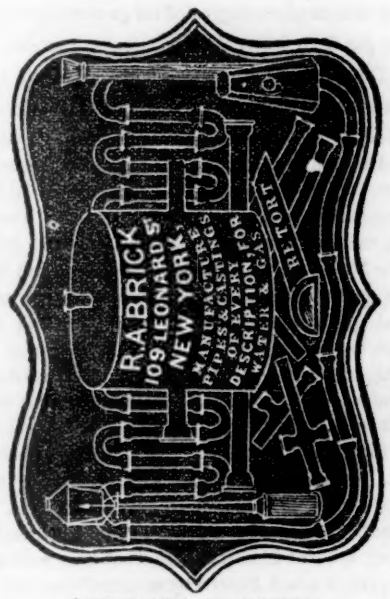

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☞ Our subscribers would confer a favor upon us by remitting *checks, or Post Office Money orders*, as we are frequent losers by money sent by mail.

☞ We should be pleased to make our journal an organ of intelligent discussion for those of our subscribers and readers who may wish to gain, or give information on the subjects to which our columns are devoted. We solicit letters from those who make the study of gas a pleasure as well as a profession.

DIFFERENT PROCESSES OF GENERATING GAS.

Our readers from time to time have found in our columns articles and communications in reference to the various plans suggested for generating illuminating gas from different carbonaceous material.

The process for generating gas from coal is most consistent with nature. A proper class of coal supplies the due proportion of carbon and hydrogen, and where such coal can be obtained at a reasonable cost, it is no doubt the most proper material for the manufacture of gas in large quantities. There are propositions from Doctor ELMER, and also from the late Mr. GWINNE, which promise to add not only to the quantity but also to the illuminating power of coal gas as manufactured in our large gas works. The Gwinne process is now in operation at Elizabeth, in New Jersey, and the Engineer and Superintendent of the works, Mr. HARRIS, reports the result quite satisfactory, getting about six feet of gas to the pound of coal, and a candle standard of 14 to 15. Doctor ELMER claims with the aid of zinc to produce an increase of 25 to 30 per cent. in the quantity of gas above the ordinary yield, and of a more brilliant illuminosity. That zinc will absorb oxygen is a fact known by all experienced in chemical experiments. This is done by the zinc in one retort of the bench, and by a jet of steam being introduced the zinc is de oxydised and rendered fit for future use. As complete works will be prepared and offered for examination in the course of three or four weeks, it would be idle for us to speculate upon the plan, and therefore await the time for a scientific and practical test of its merits.

The AUBIN Wood Gas process has been presented very graphically in our journal, and certainly is admirably adapted to localities where wood can be obtained at a reasonable price. Dr. H. Q. HAWLEY, the principal in the Aubin gas works plan, claims that with but a very small quantity of tar or Albert coal, he will produce 20,000 cubic feet of gas from a cord of hard, dry wood.

Dr. CRESSON, of Philadelphia, has patented an apparatus for making wood gas which under his manipulation was very successful, and has so proven under some other engineers. Generating gas entirely from wood, or using it as an auxiliary, will certainly be practiced in interior places. The yield of gas from wood, in connection with some petroleum residum, or a rich coal, or asphalt, is very great, as proven by some experiments made at the city of Washington, and at New Rochelle in this State, as previously shown in our journal.

Experiments are now being made at the Citizens' Gas Works, in Brooklyn, under a patent lately ob- by TYLER SABATTON, Engineer of the San Francisco Gas Works, by using superheated steam. This patent has been assigned to JAS. K. FLOYD, of the house of HERRING & FLOYD, of this city. We await the result with interest, as the plan varies from any yet presented to the public, and we always welcome improvements in everything.

There is also a patented plan by ABRAHAM MYERS, Esq., of Philadelphia, which proposes to generate all the tar from any substance into gas. The proposition is to return the tar into the retorts by automatic action until it is completely used up. If this succeeds, the increase in quantity of a good candle standard gas will be very considerable. The process is a simple one.

We have been told that the SAUNDERS Water Gas plan "yet lives," and are prepared for its second *debut* with some qualifications to warrant its reconsideration at least.

The SALISBURY PETROLEUM GAS Co., of New York, are presenting to the public an apparatus for generating gas from petroleum which embraces several patents, and professes to embody everything good within its specifications. The very numerous old plans for making gas from petroleum or other liquid carbons, engender doubts of any new one being an improvement of importance; but we shall analyze the plan in detail, and will explain it for the information of our readers.

The Atmospheric Air Machines, of which there are several, are convenient and economical in places where there are no gas works, or where only a small quantity of gas is required. The Empire Gas Machine is apparently most approved. They operate very well at a temperature above 40° Fahrenheit.

In all the processes known so much depends upon the elimination of them that parties find very different results from the same material. We know that intelligent engineers of large works differ materially in their reports respecting the value of the same coal. There are many influences to operate favorably or unfavorably upon the apparatus, but the experiments in small works, as also oil and atmospheric machines, are exceedingly uncertain.

Many who have their "pet" schemes in gas economy apprehend that engineers of gas works, particularly large ones, are opposed to all new projects as innovations. On the contrary, our experience has led us to know they desire to learn anything which is of real value and merit. But so many fallacious ideas and impracticable propositions are suggested, and tests of them requested, that they have become more reticent, and unless something really new is proposed it is not deemed worth an analysis, because everything of the past has been fully examined here, as also in Europe, and the results reported. We believe, however, that *a new era* is dawning upon the gas world, and that ELMER, GWINNE, FLOYD, HAWLEY, SAUNDERS, MYERS, or SALISBURY will produce something which will interest Gas Companies, and arouse them from the lethargy which at present exists upon the subject among a large majority of the Companies.

A convention in each large State of the officers of gas companies would be highly advantageous, and enlighten those who are ignorant of the science of generating gas and a practical and economical management of the works more than volumes of reading would do. At such conventions, engineers and scientific men would be found to make a most agreeable and valuable association, and discussion tend to diffuse information of the greatest value to the gas interest.

☞ We have before us, a Gas Heating and Cooking apparatus of simple construction and beautiful design, which seems to meet all requirements for convenience and utility. It is arranged to attach to any gas fixture in a moment, so as to boil, fry, bake, stew, etc.

The inventor claims a superiority for his apparatus, inasmuch as the gas is passed from the ordinary gas-burner into and through a tube surmounted by a heater, which so heats and rarifies the gas in its passage as to materially increase its effect at the point of combustion.

It is well known that heating gas before combustion, as well as the atmosphere which supports combustion, increases the illuminosity and economizes the consumption, because the gases are more readily brought to that degree of heat to produce incandesence and light, and the carbon is more perfectly consumed before it passes out of the sphere of combustion. The same rule is held to apply for heating purposes by the inventor, whose plan is to mix the air and gas in its passage through the heating tube and so rarify it that the combustion is quite perfect at the point of radiation.

ALEX. M. LESLEY, at 605 6th Avenue, is the inventor of this really neat and useful article.

☞ The attention of Gas and Water Companies, Railroad Companies, &c., is directed to the advertisement of the National Foundry and Pipe Works, of Pittsburgh, which will be found on the succeeding page. The quality of their work is, we believe, unsurpassed in this country, and with a capacity for turning out 80 tons per day, they can fill all orders promptly. We take pleasure in recommending them to the public.

☞ We would call the attention of our readers to the advertisement of the Massachusetts Institute of Technology, published on the following page of this number. As an Institution for imparting knowledge of the subjects it makes a speciality it rates second to none, and we bespeak for it a liberal support.

☞ On page 260 of this number of the Journal we present a very novel and useful table for reference, to find at one view the day of the week on which any given day of the month of the present century has fallen or will fall. Compiled expressly for thi paper.

IMPORTANT NOTICE.

To ADVERTISERS.—Our paper offers a superior medium as an advertising agent, to all those who manufacture or sell machinery or appliances of any kind for Gas, Mining, Water, Sewerage, the production or purification of Oils, &c. &c., not so much on account of a wide-spread circulation, as from the fact that it goes directly to the hands of those who are constantly using and requiring machines and improvements for these branches, and who look through our columns for information where to procure them. The class of people who read our paper not only peruse our pages of reading matter, but read the advertisements as well, for the reason that they are directly interested in all things pertaining to their business. We therefore ask, with confidence that we can do them justice, all parties having machinery or improvements of any kind for either of the objects to which our paper is devoted, to send in their advertisements and avail themselves of these advantages. It will be observed that our terms for advertisers are very reasonable.

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San Jacinto, ...	17	San Salvador, ..	April 7

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CENTRAL OF NEW JERSEY.

Leave from pier No. 15 North River, (Liberty Street,) daily at 6 a. m. for Easton, Mauch Chunk, Williamsport, Wilkesbarre, Mahanoy City, &c. Mail train at 8 a. m. for Flemington, Epston, Water Gap, Scranton, Wilkesbarre, Great Bend, Pittston, Binghampton, &c., 9 a. m. Western Express for Easton, Allentown, Harrisburgh, Pittsburgh, and the West, with but one change of cars to Cincinnati or Chicago, and but two changes to St. Louis. 12 m. for Easton, Allentown, Mauch Chunk, Reading, Pottsville, Harrisburgh, &c. 4 p. m. for Easton, Scranton, Great Bend, Bethlehem, and Mauch Chunk. 5 p. m. for Somerville and Flemington. 6 p. m. Express Train for the Oil Region and Erie, via Mauch Chunk and Williamsport, daily, except Saturdays. 6·30 p. m. for Somerville. 7 p. m. for Somerville. 8 p. m. Western Express for Easton, Allentown, Reading, Harrisburg, Pittsburg, and the West. Sleeping cars through from Jersey City to Pittsburg every evening.

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For Elizabeth, 6, 7, 8.10, and 10 a. m.; 1, 2, 3.20, 3.40, 4,10, 4.30, 5, 5,10, 5.40, 6.10, 7.10, 8.20, 10 and 12 p. m.

For Rahway, 7, and 10 a. m. and 12, 2, 3.20, 4.10, 5.10, 5.40, 7.10, and 12 p. m.

For New Brunswick, 7, 8, 10, and 11.30 a. m.; 12 m. 4, 4,10, 5.10, 6, and 12 p. m.

For Millstone, at 8 a. m.; 2.15, and 4.10 p. m.

On Sundays trains leave New York for Philadelphia and intermediate stations at 6 p. m. and for Washington, 7,00 p. m.

Military tickets will not be received in the 8 a. m. or 7 p. m. trains.

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450	94	112 00	25 00	137 00
600	02	150 00	30 00	180 00
750	39	188 00	35 00	225 00
1,000	64	250 00	42 00	292 00
1,200	48	300 00	45 00	345 00
1,400	50	350 00	50 00	400 00
1,600	52	400 00	54 00	454 00
1,800	55	450 00	60 00	510 00
2,000	58	500 00	62 00	562 00
2,500	60	625 00	72 00	697 00
3,000	63	750 00	85 00	835 00
3,500	66	875 00	87 00	962 00
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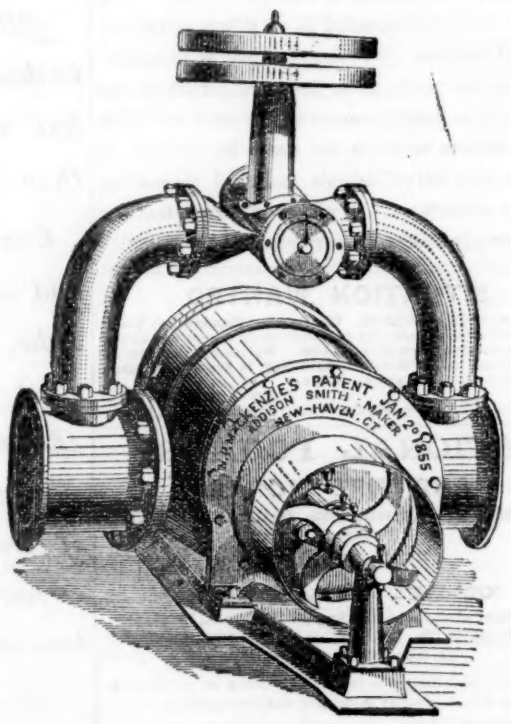

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Salesroom, 536 Broadway.

This Machine is constructed on entirely new principles of mechanism, possessing many rare and valuable improvements, having been examined by the most profound experts, and pronounced to be SIMPLICITY and PERFECTION COMBINED.

It has a straight needle, perpendicular action, makes the LOCK or SHUTTLE STITCH, which will NEITHER RIP nor RAVEL, and is alike on both sides; performs perfect sewing on every description of material, from Leather o the finest Nansook Muslin, with cotton, linen, or silk thread, from the coarsest to the finest numbert.

Having neither CAM nor COG WHEEL, and the least possible friction, it runs as smooth as glass, and is

Emphatically a Noiseless Machine!

PRICE OF MACHINES,
COMPLETE:

No. 1, Family Machine, with Hemmer, Feller, Gauge, Braider, & Corder, complete. - - - $60
No. 2. Small Manufacturing, with Extension Table, $75
No. 3. Large Manufacturing, with Extension Table, $85
No. 3. Large Manufacturing, for Leather, with Rolling Foot and Oil Cup, 100

One-half hour's instructions is sufficient to enable any person to work this Machine to their entire satisfaction.

Agents Wanted in all Towns in the United States, where Agents are not already established. Also, for Cuba, Mexico, Central and South America, to whom a liberal discount will be given Terms, invariably CASH on delivery.

T. J. McARTHUR & CO.,
536 Broadway.

WILCOX & GIBBS SEWING MACHINE

It is entirely noiseless.
A patented device prevents it being turned backward.
The needle cannot be set wrong.
It received the Gold Medal of the American stitute in 1863.
InSend for a circular containing full information, notices from the press, testimonials from those using the machine, &c.

JAMES WILLCOX,
Manufacturer, 508 Broadway, New York
Principal Offices:
NEW YORK—508 Broadway.
BOSTON—323 Washington street.
PHILADELPHIA—720 Chestnut street.
CHICAGO—133 Lake street.
CINCINNATI—70 West 4th street.
LONDON—135 Regent street.
HAMBURG—44 Hermann street.
PARIS—82 Boulevard de Sebastopol.
ST. PETERSBURGH—15 Gorochovay.
VIENNA—9 Wildpretmarket.
BRUSSELS—12 Rue Croisade.
SYDNEY, AUSTRALIA—292 Pitt street

GAS-BURNERS.

T. G. ARNOLD,
MANUFACTURER OF
GAS-BURNERS
And Importer of SCOTCH TIPS,
224 and 226 West 21st street,
formerly No. 447 BROOME St., New York.
Mercury Cups, Portable Sockets, Burner Pillars, Burner Pliers, &c., &c.

C. GEFRORER,
Manufacturer of
GAS-BURNERS,
For Lighting and Heating Purposes.
GAS HEATING AND COOKING APPARATUS; FITTERS' ROVING APPARATUS, &c.
529 Commerce st., bet. Market & Arch, Philadelphia.

WOODEN PURIFYING TRAYS
PATENT
Conically Slotted Solid Wood Sieves
FOR PURIFILRS.

The Conically Slotted Solid Wood Tray or sieve was patented 21st October, 1862, and all persons are cautioned against purchasing them of any other person except the subscriber. The following companies are now using these trays.

Manhattan, New York,
Metropolitan,
New York
Albany,
Troy
Brooklyn, L. I.
Williamsburgh,
Citiz us
Baltimore Md.
Louisville, Ky.
Chicago. Ill
Cambridge,
And numerous others

Orders eceived by mail or otherwise.
JOHN L CHEESMAN.
147 Avenue C New York City

WEST'S IMPROVED PUMPS, the most Simple, Durable, and Powerful, and the Cheapest in use.
J. D. WEST & CO.,
No. 40 Cortland street,

JOSEPH LENNIG,
1615, 1617, and 1619 Francis St.,
Above Ridge Avenue, Philadelphia, Pa.,
MANUFACTURER OF
WET & DRY GAS METERS,
STATION, SHOW, & EXPERIMENTAL METERS,
Photometers, Pressure Registers, Indicators, and Gauges, Governors, Meter Provers, Centre Seals, Fluid Gauges, &c.
GAS APPARATUS
Of the most reliable and approved construction manufactured and on hand at the
UNION GAS METER WORKS.

D. PARRISH, Jr.,
GAS ENGINEER
And Contractor for Coal or Oil Gas-Works.
Estimates given for Gas-Works, Gas-Holders, or any Gas Apparatus.
205 1-2 Walnut st., Philadelphia, Pa.
Box 1956, Post Office.

To Manufacturers of Petroleum Gas.

For sale, Parrish's Patent Gas and Air Mixer, adapted to all works using Petroleum or other oils, by which rich Petroleum Gas is mixed, after it leaves the holder, with a proper proportion of air, giving it the greatest illuminating power, without smoke, through any burners. The apparatus being attached to the outlet pipe, requires no alteration of the works.

Apply at the Gas-Works of St. Nicholas Hotel, No. 63 Mercer st., N. Y., where one can be seen in operation; or address D. Parrish, Jr., St. Nicholas Hotel, New York city, or No. 1416 Arch street, Philadelphia.

TO GAS COMPANIES.

THE UNDERSIGNED DESIRES TO undertake the supervision of several small Gas-works, to visit and examine them as often as may be necessary; to obtain and inspect their coal, castings, fire-brick, and other materials; and to manage their general business in such a manner that they shall be under such supervision as is now attainable in large works, at much increased cost. Also, to advise as general Consulting Engineer and expert in practical chemistry.

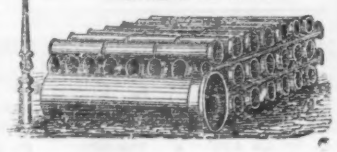
CHAS. M. CRESSON,
Late Asst. Engineer of the Philadelphia Gas-works
417 Walnut st., Philadelphia.

THE AUBIN GAS-WORKS COMPANY,
Of Albany, N. Y.,

Now contract their works to make 10,000 feet of good Gas from 2,000 pounds of *hard* wood and 40 gallons of kerosene tar, *before payment can be demanded;* and the charcoal is worth the cost of the wood.

Many Village Gas Companies can be referred to.

R. D. WOOD & CO.,
MANUFACTURERS OF
CAST-IRON PIPE, RETORTS, &c.
Office, 400 Chestnut Street,
PHILADELPHIA.



Carrington & Co.'s
GENERAL
PURCHASING
AGENCY,
In Connection with all the Expresses
No. 30 Broadway,
NEW YORK.

Established 1854.

Purchases to order ANY article wanted from New York, (or from Europe,) for ladies' or gentlemen's use or wear,—comfort or luxury—from a cameo to a cashmere—a sea ring to a steam-engine.

Goods purchased at current City prices, and forwarded by Express, or as directed.

Commission, Five Per Cent.

Remittances, with orders, can be made by Express if preferred, as all Express Agents will take orders, receipt for and forward funds, and see to return of Goods.

SPECIAL CIRCULAR.

The Adams Express Company, appreciating the need of a capable medium connecting with the various Express Lines, through which personal and other orders for goods from this city, can be satisfactorily supplied, do recognize CARRINGTON & CO GENERAL PURCHASING AGENCY as such a medium for filling orders for every description of goods wanted from New York, and commend it to the attention of the public, and of our general and local agents, recommending our agents to extend to it all reasonable aid, by facilitating the distribution of its cards and circulars, and making known the advantages it affords.

ADAMS EXPRESS CO.
By W. B. DINSMORE, Prest.
NEW YORK, June, 1864.

We cheerfully concur in the above recommendation of the Adams Express Company.
AMERICAN EXPRESS COMPANY,
By HENRY WELLS, Prest.
UNITED STATES EXPRESS COMPANY,
By D. N. BARNEY, Prest.
WELLS, FARGO & CO.,
NATIONAL EXPRESS COMPANY,
By J. A. ULLEN
HARNDEN EXPRESS,
By L. W. WINCHESTER, Supt.
KINSLEY & CO.'S EXPRESS,
By E. LITTLEFIELD, Supt.
HOPE EXPRESS COMPANY,
A. D. HOPE, Supt.
BREESE & CO.'S EXPRESS,
By STEPHEN BREESE, Supt
NEW JERSEY EXPRESS COMPANY,
By GEORGE R. DUNN, Sup

The Greatest Improvement yet in the Sewing Machine Art!

A CURIOSITY WORTH SEEING!

Please send for circular with sample of sewing.

These Improved Machines save ONE HUNDRED PER CENT. of thread and silk, and make the LOCK-STITCH alike on both sides.

They require no instruction to operate perfectly, except "the printed directions."

No change in sewing from one kind of goods to another.

And no taking apart to clean or oil.

Our NEW MANUFACTORY is now complete, with all its machinery and tools entirely new, and is already rapidly turning out Machines which for BEAUTY and PERFECTION of FINISH are not surpassed by any manufacture in the world.

N. B.—Should any Machine prove unsatisfactory, it can be returned and money refunded.

Agents wanted in counties not vassed by ur own agents.

Finkle & Lyon S. M. Co.
No. 533 BROADWAY, NEW YORK.

GROVESTEEN & CO.,

PIANO-FORTE MANUFACTURERS.

499 BROADWAY, NEW YORK.

The attention of the public and the trade is invited to our New Scale Seven Octave Rosewood Piano-Fortes, which for volume and purity of one are unrivalled by any hitherto offered in this marked. They conain all the modern improvements, French, grand action, harp pedal, ron frame, over-strung bass, etc., and each instrument being made under the personal supervision of Mr. J. H. Grovesteen, who has had a practieal experience of over thirty years in their manufacture, is fully warranted in every particular.

THE "GROVESTEEN PIANO-FORTE"

Received the highest award of merit over all others at the Celebrated World's Fair!

where were exhibited instruments from the best makers of London, Paris, Germany, Philadelphia, Baltimore, Boston, and New York; and also at the American Institute for five successive years, the gold and ilver medals from both of which can be seen at our warerooms.

By the introduction of impro ements we make a still more perfect Piano-Forte, and by manufacturing largely, with a strictly cash system, are enabled to offer these instruments at a price which will preclude all competition.

PRICES.

No. 1, Seven Octave, round corners, Rosewood Plain Case $275.
2, Seven Octave, round corners, Rosewood Heavy Moulding, $300
No. 3, Seven Octave, round corners, Rosewood Louis XIV, style $325, a fac-simile of the accompaning cut.
TERMS—NET CASH, IN CURRENT FUNDS. Descriptive Circular sent free.

LILLIE'S
CELEBRATED
Chilled and Wrought Iron Safes,
WROUGHT IRON FIRE-PROOFS,
LOCKS AND VAULT DOORS.

These Fire-Proofs are manufactured to supply a demand for Security Against Fire, less expensive than my celebrated and superior Chilled and Wrought Iron Burglar and Fire-Proof Safes.

They furnish similar and equal security to the Safes generally manufactured in the different cities, but are SUPERIOR to them in their Fire-Proof qualities and durability, the iron being effectually rotected from rust in any climate, and the Fire-proof not subject to lose its utility by age. This is n important advantage gained to the purchaser, as Safes often rust out and become worthless in wo or three years.

To substantiate my position, those purchasing these Fire-Proofs are at liberty, by giving me due notice of time and place of trial, to test them by fire with any other Safe of the same size; and should they not prove superior, I will refund the money, or a new Fire-Proof, as the purchaser may decide.

LIST OF SIZES & PRICES OF WROUGHT IRON FIRE-PROOFS

	Outside.			Inside.			
No.	Height.	Width.	Depth.	Height.	Width.	Depth.	Price.
6	40	31	27	31	21	15	$150
5	34	21	26	24	21	14	125
4	31	27	25	22	18	13	110
3	30	24	24	21	15	12	100
2	28	22	23	20	14	12	75
1	24	19	20	17	11	10	50

Sample of Fire-Proof Safe at Office of the Am. Ad. Agency, 389 Broadway, N. Y.

PRICE LIST.
LILLIE'S CELEBRATED CHILLED & WROUGHT IRON SAFES.

BANK, FIRE, AND BURGLAR SAFES.
Folding Doors, D Lock.

	OUTSIDE.			INSIDE.			
No.	Height.	Width.	Depth.	Height.	Width.	Depth.	Price.
	In.	In.	In.	In.	In.	In.	
1	66	50	29	54⅝	39	18	$950
1½	59	50	26	48	39	15	800
2	53	44	27	42⅛	33	15	600

MERCANTILE F AND B SAFES.
Folding Doors and Monitor Locks.

3	50	42	27	40	32	16	$500
4	46	42	27	36	32	16	450
4½	38	46	27	28	36	16	450
5	42	38	27	31⅛	27½	15	350

Single Doors and M. Lock.

6	38	35	26	27⅛	23½	15	$250
7	34	31	26	24	21	14	200
8	31	28	24	21	18	13	175
9	30	24	24	21	15	12	140
10	26	22	22	19⅛	13½	12	120
11	24	20	18	17	17	10	100

HOUSE SAFES.

SIDE BOARD		$600
DINING ROOM		350
PANTRY (No. 1)		275
PANTRY (No. 2)		150
DUODECAGON BANK LOCK		100
MONITOR SAFE	do.	50
SAFE	do.	10

NATIONAL BANK SAFES,
With 2 Inside Burglars and 1 D and 2 M Locks.

	OUTSIDE.		INSIDE.			
No.	Height.		Hei	Width.	Depth.	Price.
	In.		In.	In.	In.	
1	68		55	39	18	$1,200
2	61		48	39	18	1,050
3	57		42½	33	18	900

BANK VAULT BURGLAR SAFES,
With Folding Doors and D L"ok.

0	68	53	27	64	48	20	$1,000
0½	61	53	27	55	46	20	800
1	57	47	27	49	40	20	600

BANK VAULT BURGLAR SAFES,
Single Doors and D Lock.

2	53	32	26	49	28		
	42	36	22	38	32	19	
4	36	31	20	32	27		0
5	30	24	18	26	20	14	

BANK VAULT DOORS AND FRAMES,
D and S Lock.

No.	Height clear.	Width clear.	Depth adjustable.	Price.	Weight.
	In.	In.	In.		
1	72	27	20	$400	3,000
2	72	27	20	275	1,500

Orders received and filled at net cash prices, by the AME N VERTISING CY, 389 Broadway, New York. All Safes shipped from Troy free of cartage. ....*stee Depart.*, E. ALVORD. *Corresponding* OWLER

WEST'S IMPROVED PUMP.
Anti-F eezing, Double-Acting, Forcing, and Lifting

These Pumps have now been in general use a number of years, and give better satisfaction than any other, and are recommended as

THE BEST!

by CAPTAIN ERICSSON and other eminent engineers. We can refer to thousands using them, a guarantee that all will recommend them. They are more simple in construction, and work easie and cost less than all others.

"Our readers will find the double acting, improved pump of J. D. West & Co., one of the best the market. It is very simple, works to a charm, so that any child may use it; throws a stead continuo us stream, and does not freeze in the coldest exposures, and is unusually cheap. We ca this know.ngly, and give the testimony of our own accord, without the knowledge or request of the proprietor "—*New York Evening Post, July 1st*, 1863.

"J. D, WEST & Co.: We are pleased to state that the Pumps we had of you about a year ago, have been in constant use, twelve hours each day, and raise for the use of our woolen factory, about 130 gallons per minute. They work with but little power, compared with pumps we have used before, and do not get out of repair, and are satisfactory in all respects.

"DUNLAP MANUFACTURING CO."

Solon Robinson to the Farmers' Club.

Jan. 23.

"No farmer who owns a well or cistern can possibly afford to be without an iron pump. It should be a once a suction and force pump—a perfect little fire engine—such a one known as 'West's Improved Pump.' I speak of this Pump because I happen to know it....to be very simple, durable, powerful and cheap, and it don't freeze up, nor get out of order once a year....I know this, and think I may be doing the farmers good by speaking of it....A boy ten years old can work it, and throw a continuous inch-and-a-quarter stream....It can be made to work in deep wells as well as ni shallow ones."

"The undersigned having to use "West's Improved Pumps," cheerfully recommend them as simple, durable, and powerful in raising and throwing water, and for their ease of action, security against frost, and low price, we believe them superior to all others.

"WARREN LELAND, Met. Hotel, N. Y.
"J. W. POMEROY, Yonkers, N. Y.
"JOHN MESSEREAU, N. Y.
"DOMINICK LAWRENCE, Westchester."

From the New York Observer.

"We have had in use for months past one of West's Pumps, which has given us more satisfaction as a force and lifting pump than any we have ever used. It is one of great power, and well adapted for ship's decks, mines, factories, greenhouses, graperies, etc. *The Mining Chronicle and Railway Journal* says: 'It is recommended for its extreme simplicity of construction, great strength, and consequent durability and cheapness of repair. There is no stuffing-box—the pressure being held by a cup packing, like that upon the working-piston, working in a cylinder, fitted for the purpose within the upper air chamber—which we think a great improvement, as stuffing is so liable to be deranged and leak under strong pressure, to say nothing of the loss by friction incident thereto. It has also two air-chambers; thus the action of the valve is cushioned upon both sides by air—preventing water-hammer and vacuum-thump. The valves are very accessible and simply and cheaply repaired. They work much easier than any pump we have ever seen; the 4-inch cylinder being worked by children in wells 100 feet deep, and as they are extremely cheap, as well as simple and strong, we freely recommend them.'"

"CAMBRIDGE MINE, N. C., June 15, 1863.

"J. D. WEST & Co.—Gents: The Pump which I ordered for our mine is received, and put to work in our underlay shaft, which we are sinking. We find that one man will, with ease, lift 50 gallons per minute. We lifted in three and a half hours all the water in the shaft, which measures seven by twelve feet and thirty feet deep, and it was full when we commenced. It answers our expectations in every respect, and our workmen are highly pleased with it. It will do great service with but trifling expense for repairs.

"Yours, respectfully, BURR HIGGINS."

"This may certify, that I have been using, at my manufactory, for the last four years, 'W s Improved Pumps.' I now have in use three of said Pumps, one of which is kept constantly work, 24 hours of each day (save Sunda , and has been running for the past two years. I pro nounce them, unhesitatingly, the best Pumps that have been brought to my notice, having used many others previously. They are simple in their construction, and not easily disarranged.

"N. Y., Oct. 10, 1859. JAS. A. WEBB."

We have plenty more such certificates, but think these are enough. For Pumps, Hose, Pipe, etc., address or call upon

J. D. WEST & CO., 40 Cortlandt st., New York.

Orders may be sent through the AMERICAN ADVERTISING AGENCY, 389 Broadway

EDDY'S

Kerosene Cooking & Heating

STOVES AND RANGES.

THESE COOKING STOVES WILL

☞ *Bake, Boil, Stew, Fry and Roast,*

With the greatest economy and facility, and without heating the room in which they are used. They are perfectly simple, operating like an ordinary Kerosene Lamp with a chimney, and are the only Kerosene Stoves that burn without smoke or odor.

"We have been perfectly astonished to see what a labor-saving, dirt saving and heat-saving institution is EDDY'S PATENT KEROSENE STOVE. Taking the cost of running it, and the result attained, it is the best patent in the market."—*Worcester Daily Spy.*

Our Heating and Cooking Stoves are very convenient and economical, especially where a fire is required but a few hours at a time.

Orders for Stoves may be sent through American Advertising Agency, 389 Broadway, New York.

LESLEY & ELLIOT,

Manufacturers, No. 494 Broadway, New York.

Send for Illustrated Circular. (136

KNITTING MACHINES

FOR

Families and Manufacturers,

☞ *Something New and Invaluable for Family Use.*

We offer the public the simplest, strongest and best Knitting Machine in the world.

It occupies but little space—is portable and can be attached to a stand or table, weighs about 40 lbs.

It will knit a variety of Stitches—the breakage of needles is trifling—the cost of needles is insignificant and the most delicate material can be knit pure and spotless, as the needles are not oiled.

Orders for Machines may be sent through the American Advertising Agency, 389 Broadway, N. Y.

Send for a Circular—Agents wanted.

DALTON KNITTING MACHINE CO.,

137] 537 Broadway, N. Y.

WEED'S

HIGHEST PREMIUM

Shuttle Sewing Machine

Has only to be seen and operated to be Appreciated.

Call and see for yourself before purchasing. Please bring samples of various kinds of thread, (such as is usually found at stores,) and various kinds of fabric, which you know the former most popular Sewing Machines either cannot work at all, or, at best very imperfectly.

SUPERIORITY.

over any other Machine in the market will be seen at a glance.

1st It runs easily and rapidly, and is so constructed as to endure all kinds of hard usage.

2d. No breaking of threads in going over seams.

3d. No imperfect action of the feed at uneven places in the work.

4th. The Weed-stitch catches of itself, and will sew from the finest lace to the heaviest leather, and 200 cotton to coarse linen thread.

5th. The Weed Machine will do beautiful quilting on the bare wadding, without using inner lining; thus leaving it soft as if done by hand.

6th. The variety of fancy work that can be done on the

WEED MACHINE,

with so little trouble, makes it equal, if not superior, to six machines combined; for instance. it Binds, Hems, Tucks and Sews on the band at the same time, and in face, the

WEED NO. 2 MACHINE,

as before stated, is equivalent to a combination of any six ordinary machines.

Orders for Machines may be sent through the American Advertising Agency, 389 Broadway, N. Y.

Below we give a few prices:

No. 2. Oil Black Walnut, Ornamented with Hemmer.	$60,00
No. 2. Oil Black Walnut, Hall Case, Ornamented, with Hemmer.	65,00
No. 3. Extra Oil-Polished Black Walnut, Half Case, Large Table beautifully Ornamented.	75,00

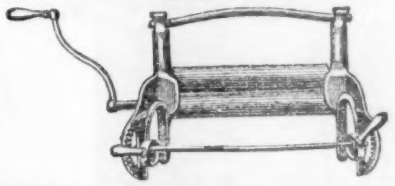
WEED SEWING MACAINE Co.,

36) 506 Broadway, New York

PUTNAM'S CLOTHES WRINGER.

IT IS THE ONLY RELIABLE

Self-Adjusting Wringer.



No Wood-work to Swell or Split. No Thumbscrews to get out of order. Warranted with or without Cog wheels.

It took the First Premium at Fifty-seven State and County Fairs in 1863, and nearly double that number in 1864, and is, without an exception, the *best* Wringer ever made. Patented in the United States, England, Canada, and Australia. Agents wanted in every town, and in all parts of the world. Energetic agents can make from $8 to $10 per day.

WHAT EVERYBODY KNOWS, VIZ.:

That Iron well galvanized *will not rust.*

That a *simple* machine is better than a complicated one.

That a Wringer should be *self-adjusting, durable, and efficient.*

That thumb-screws and fastenings cause *delay* and *trouble* to regulate and keep in order.

That wood soaked in water will *swell, shrink,* and *split.*

That wood-bearings for the shaft to run in *will wear out.*

That the Putnam Wringer, with or without cog wheels, will *not tear the clothes.*

That cog-wheel regulators are not essential.

That the Putnam Wringer has *all* the advantages, and *not one* of the disadvantages above named.

That all who have tried it pronounce it the *best* Wringer ever made.

That it will wring a thread or a bed-quilt *without alteration.*

We might fill the paper with testimonials, but insert only a few to convince the skeptical, if such there be; and we say to all, *test* Putnam's Wringer. Test it *thoroughly* with *any* and any others, and if not entirely satisfactory, return it;

PUTNAM MANUFACTURING CO.—*Gentlemen:* I know from practical experience that iron well galvanized with zinc will not oxydize or rust one particle. The Putnam Wringer is as near perfect as possible, and I can cheerfully recommend it to be the best in use. Respectfully yours,

JOHN W. WHEELER, Cleveland, O.

Many years' experience in the galvanizing business enables me to indorse the above statement in *all particulars.*

JOHN C. LEFFERTS, No. 100 Beekman St.

NEW YORK, *January*, 1864.—We have tested Putnam's Clothes Wringer by practical working, and know that it will do. It is cheap; it is simple; it requires no room, whether at work or at rest; a child can operate it; it does its duty thoroughly; it saves time, and it saves wear and tear. We earnestly advise all who have *much* washing to do, with all intelligent persons who have *any*, to buy this Wringer. It will pay for itself in a year at most. HORACE GREELEY.

PRICES—$8, $9, and $10.

Sample Wringers sent, express paid, on receipt of price.

Manufactured and sold, wholesale and retail, by

PUTNAM MANUF'G CO.,

13 PLATT STREET, New York,

BENNINGTON, Vt.,

CLEVELAND O.

WATER AND GAS PIPE.

The Boston Bituminized Pipe Company,

Are now manufacturing and prepared to take orders, for their PATENT PIPE, (from 2 to 12 inches in diamter,) as a substitute for Iron, Copper, Lead, &c., for the conveyance of WATER, GAS, SEWERAGE, &c. &c.

From the testimonials received, and the entire satisfaction it has given those having it in use, we feel warranted in claiming for this pipe over that of any other, the following advantages, viz.:

It is much CHEAPER—has great strength (it having been tested to 500 lbs. to the square inch,) combined with LIGHTNESS, costing less for transportation; the joints are easily made and perfectly tight; it does not expand or contract from different degrees of tempera ture, and is free from *CORROSION* or *CONCRETIONS* forming; does not impart any taste or injurious properties to water, and as far as anything can be said to be indestructible, we deem this to be.

As a GAS PIPE, we say it has no superior. The Lowell Gas Light Co., purchased and laid some of this Pipe last year, and have likewise subjected samples to a test of four month's duration in their dry lime purifiers, with the most satisfactory results, in fact establishing beyond a doubt, its perfect adaptation to the wants and requirements of Gas Companies. specimens of which, together with the statement of E. Cushing, Esq., Agent Lowell Gas Light Co., who made these experiments, I shall be pleased to show, and give all other needed information, by applying in person, or by letter, to JOHN L. WEBSTER, Treas.,

Boston Bituminized Pipe Co.,

127] No. 2 Pearl st. House, Boston.

AMBROSE SPENCER GILCHRIST.

(LATE CAPT. U. S. V.,)

CIVIL, MINING

AND ARCHITECTURAL ENGINEER,

No. 200 BROADWAY, Office 12.

New York.

New York, April 18th, 1864.

* * * * * *

We respectfully invite your attention to and consideration of the justly celebrated and reliable remedy fo DYSPEPSIA, HEARTBURN, DEBILITY and PROSTRATION. The Proprietors are proud to acknowledge the unparalleled success which has attended the sale of their valuable preparation, known in nearly every portion of the civilized world as the

"GOLDEN BITTERS."

We risk nothing when we term them a *valuable preparation,* for they are one of the few articles of the present day which are not a humbug; and we are willing and able to satisfy any person or persons who will call upon us, that the celebrated "GOLDEN BITTERS" are a genuine *bona-fide hygienic* article. It is the wish of the proprietors that the virtue of the article be tested before condemning. A decision of their merits by any one who has tried them, is worth a million of purchased bogus testimonials.

For Creating a Healthy Appetite

they are invaluable, and are unequalled as a TONIC. They are mild in their action, and operate by giving *vigor* and *strength* to the system,—not by any change they produce in the solids, but through the medium of the living principle.

They are Purely Vegetable,

being composed of Gentian Root, Calamus, Sassafras, and many other remedial agents of the Vegetable world, all preserved in Jamaica Rum and Sherry Wine.

As a Beverage,

They are the most *wholesome, invigorating* and *palatable* stimulant ever offered to the public And the fact of their being prepared chemically and scientifically, precludes the possibility of a bitter, unpleasant taste, common to Bitters generally offered for sale. We especially recommend them to LADIES, and particularly to those suffering from

DEBILITY, WEAKNESS, AND PROSTRATION.

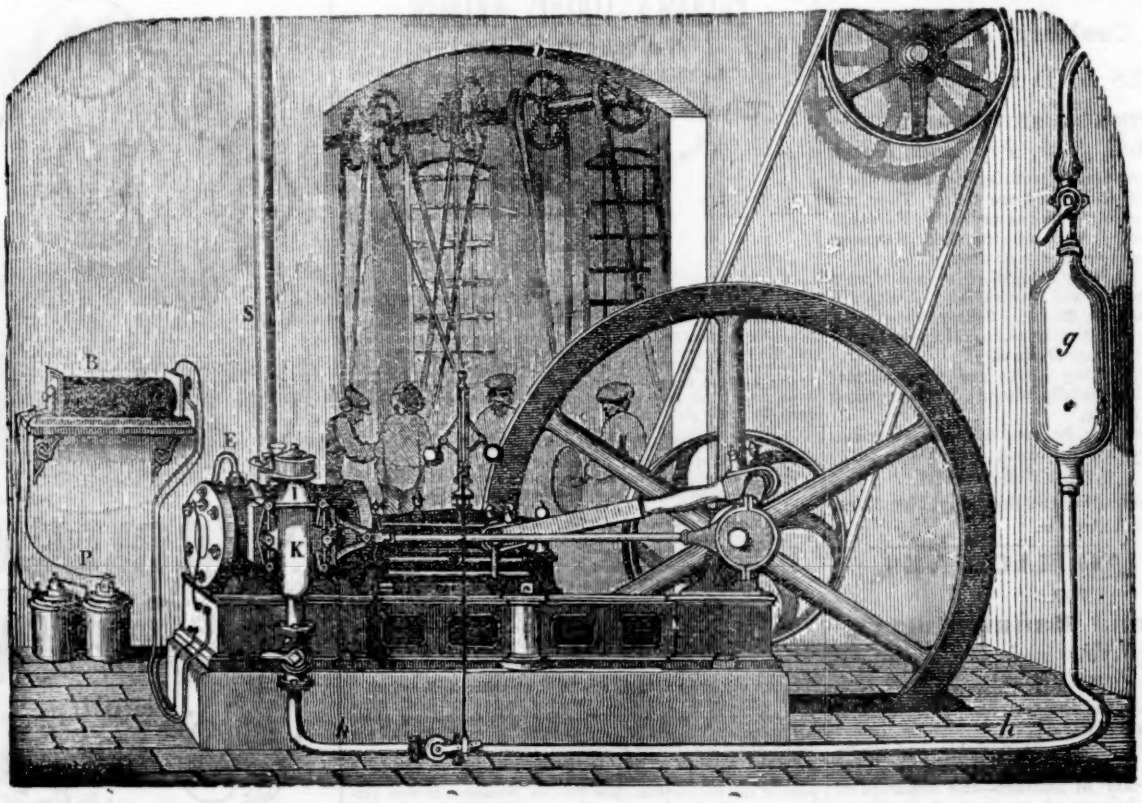
Half a wine glass of these "Bitters" three or four times a day, will produce a remarkable healthy change in persons greatly debilitated.

The "Golden Bitters" have been tried and not found wanting. They are put up in our own *Patent* quart bottles, and for sale by Druggists, Grocers, &c., throughout the world. Each bottle bears a fac-simile of the signature of Hubbel & Co.

GEO. C. HUBBEL & Co, Sole Proprietors

CENTRAL DEPOT, American Exp. Building, New York.

THE GOLDEN BITTERS.—We are not an advocate of stimulants or an alcoholic character; indeed we deprecate this "daily tonic" idea—this "morning toddy" which we see offered in all sorts of shapes as a recuperator, invigorator, revitalizer, &c. As a rule all artificial stimulants are dangerous remedies, and must be taken into the system as you would mercury or arsenic, in very small doses. But we have had an opportunity to try the now well-advertised article known as Hubbel's Golden Bitters, and are frank to say that where the system needs building up, where a stimulant is required to aid nature in restoring a lost appetite and infusing a vigorous action to the debilitated functions, we can recommend these Bitters. Hubbel's Golden Bitters are evidently intended to improve the debilitated human system, rather than to tickle the palate, and are, therefore a harmless and safe remedy keep in the house.—*New York Weekly Day Book.*



MOTEUR—LENOIR.

LENOIR GAS ENGINE.

This is a horizontal engine, in which a piston, by a connecting rod drives a horizontal shaft.

The gas enters by the pipe "h" from the regulating reservoir "g," (made of vulcanized india-rubber,) which regulates the feeding and the branches connected with the gas-pipe.

The tube, K, receives the gas conveyed by the pipe "h," and conducts it to the valve, which opens and closes alternately, by means of a rod moved by an eccentric wheel fastened to the end ot the shaft.

Two of Bunsen's piles, P, sufficient to produce the electricity are placed at a little distance from, and in communication with a Ruhmkorff electric apparatus, B. The electric current of this apparatus is conducted by means of insulated wires to the electricity distributor "m," placed on the front of the frame, while the current of electricity and its arrival at the inflammator, inserted at each end of the cylinder, is directed by the movement of the piston-rod, which, by an ingenious combination, impels a small movable slide before the distributor.

The burnt gas, after having performed its functions in the machine, escapes, by means of a valve, through a pipe, S, and the water designed to cool the interior of the cylinder enters through a double passage, by means of a pipe situated near the escape-valve, and goes out by the pipe, E.

A two horse and a half horse Engine are now in practical operation at the Dry Dock Iron Works, No. 435 East Tenth street, near East River, New York, where they are being manufactured, and those interested are invited to call and examine them.

THE LENOIR GAS ENGINE

Requires no Fire and makes no Smoke,

No Noise, no Dirt, and is thoroughly safe.

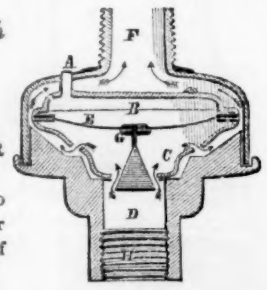
It is propelled by the expansion of Air, dilated by the combustion of Gas within the cylinder, ignited by the

ELECTRIC SPARK

NOTICE TO GAS COMPANIES AND GAS CONSUMER

THOMPSON'S PATENT GAS CONTROLLER,

The only Self-Acting Gas Controller, Regulator, and Burner Combined which has ever been invented, or known to science.



THE PRINCIPLE UPON WHICH THE THOMPSON'S AUTOMATIC GAS CONTROLLER works is one well known to mechanics, and is simple in its operation.

Within the circumference of a small cylinder below the burner is placed a conical valve attached to a movable diaphragm. The diaphragm rises or falls as the pressure of gas from the pipe is lesser or greater, and the valve acts upon the valve-seat with such regularity of movement that in a difference of em five-tenths of an inch pressure to five inches the variation in flame is hardly perceptible.

The simplicity of its machinery and the nature of the material used in its construction insure its regular action and durability.

In consequence of the uniform quantity of gas which passes the Controller to the burner, there is no waste, and a steady, soft flame is produced, which is important to all who read, write, or work by gas-light. The unsteady flickering blaze which invariably exists when the pressure of gas is beyond the requisition for consumption, has injured the sight of thousands who have been subjected to it.

For street lamps these Controllers are especially valuable, because the pressure varies materially during the night, and in consequence there is a waste of gas, and the light variable.

Improvements have lately been made in the mechanism of the Controller which makes them almost a perfect meter to each burner, and they are now offered to he public with more confidence than ever before.

Reference is permitted to the following named gentlemen—

Col. CHAS. ROOME, President Manhattan Gas Company, N. Y.
C. H. SAND , Esq., President Metropolitan Gas Company, "
J. H. ADAM, Esq., President New York Gas Company, "
PETER COOPER, Esq., Cooper Institute, "
JOHN A. DUFF, Esq., Olympic Theatre, "

GEO. H. KITCHEN, Inspector of Gas Meters, N. Y.
A. L. BOGART, Esq., Gas Engineer.
Col. J. A. SABATTON, Engineer Manhattan Gas Company.
Col. A. J. WHITE, Engineer Metropolitan Gas Company.
J. K. SIMPSON, Esq., Engineer Cooper Institute.

Persons interested are invited to call at the Office, 111 Pearl street, where they can see the operation by pressure guage and test meters]

M. L GALLENDER, Agent
Office, 111 PEARL STREET.

THE AMERICAN METER CO.

Organized under the General Manufacturing Laws of the State of New York

SAMUEL DOWN, PRESIDENT. HENRY CARTWRIGHT, VICE PRESIDENT. RICHARD MERRIFIELD, SECRETARY AND TREASURER

TRUSTEES.

SAMUEL DOWN, WILLIAM HOPPER, R. H. GRATZ, HENRY CARTWRIGHT, RICHARD MERRIFIELD.
THOMAS C. HOPPER, *Superintendent at Philadelphia.*

This Company is now prepared to furnish WET AND DRY GAS METERS, STATION METERS, GOVERNORS, PRESSURE INDICATORS & REGISTERS, SERVICE and METER COCKS, and all other articles in their line appertaining to the use of Gas-Works.

The combination of Mechanical and Scientific Skill, and the long experience of the several members of the Company, is a sure guarantee of durability, accuracy and excellence of workmanship. Orders addressed

AMERICAN METER COMPANY,

West Twenty Second Street, New York. Arch and Twenty-Second Streets, Philadelphia. No. 23 West Street, Boston will meet with prompt attention.

Harris & Brother, Practical Gas Meter Manufacturers,

Continue, as heretofore at their old Establishmen, No. 1117 CHERRY ST., PHILADELPHIA, to Manufacture

WET AND DRY GAS METERS, and all kinds of GAS APPARATUS, and furnish all articles appertaining to the use of Gas Works. ☞OUR WORK WARRANTED—Satisfaction Guaranteed. Orders respectfully solicted, and promptly attended to, by
HARRIS & BRO., No 1117 Cherry st., Philadelphia.

Messrs. Harris & Brother,

Philadelphia Gas Works, February 14, 1857.

Dear Sirs;—I take great pleasure in stating that we have found your meters to register with entire correctness, and to be generally of very good quality—the number furnished by you to these works is over 5,000.

JOHN C. CRESSON, Engineer;

Office of the Gas Light Company of Augusta, Ga., March 6th, 1858.

This is to certify that having used meters manufactured by Messrs. Harris & Bro., for the last nine years, we do not hesitate to state they have given entir8 satisfaction in point of wokmanship and accuracy of registration; they are surpassed by none, and equaled by few manufactories in the Union; we have used meters made by other establishments but our preference is in favor of those made by Harris & Bro., of Philadelphia, Pa.

G. S. HOOKEY, Superintendent of the Gas Light Company of Augusta, Georgia.

Messrs. Harris & Brother, Philadelphia.

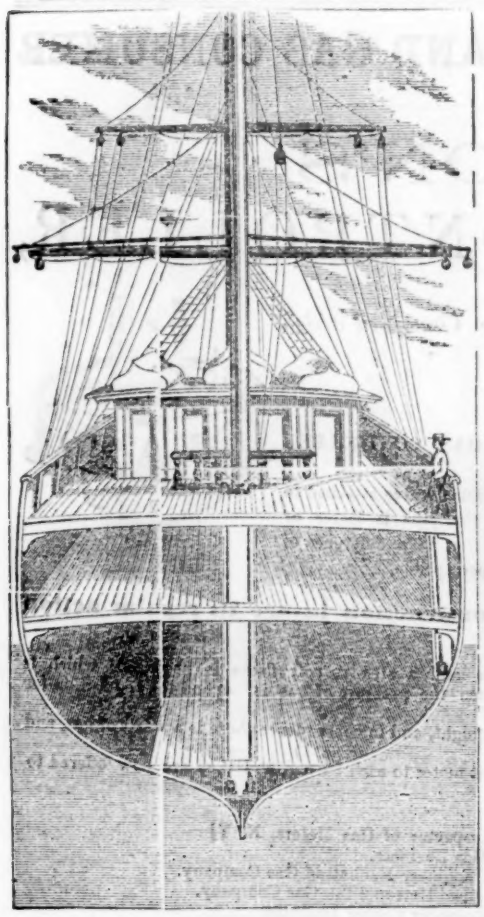
Philadelphia, March 4, 1858.

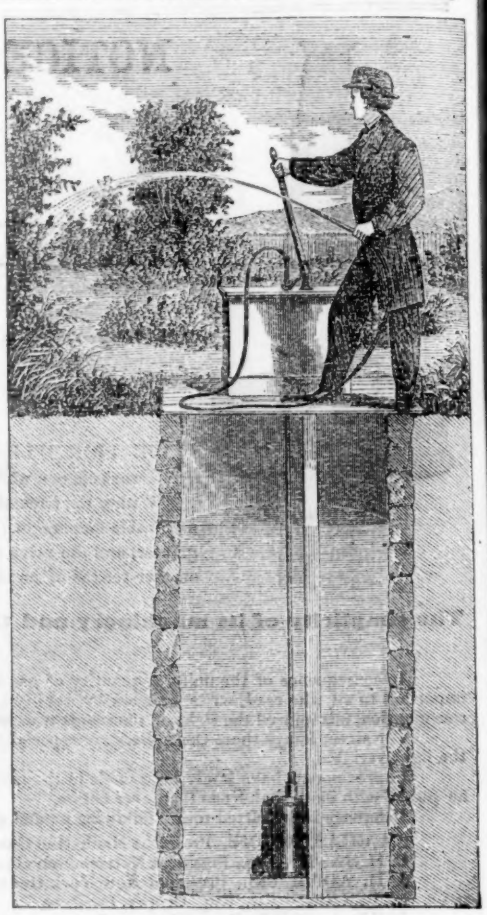
Gentlemen—We take great pleasure in bearing our testimony to the very superior character of the meters we have received from your establishment. We have always found the workmanship all we could desire, while the accuracy and reliability of their measurement have always been satisfactory. We have used meters made by other parties, and none have given as entire satisfaction as those received from you. We are, gentlemen, very truly, yours, BIRKINBINE & MEARS.

Messrs. Harris & Brother.

March 14, 1857.

Gentlemen—For the last ten years we have used in the Philadelphia Gas Works, meters made in your factory, and take pleasure in expressing my opinion to their correctness. On several occasions I have taken your meters apart, and found the material used in the manufacture of the same, to be as fine quality as is used in those imported from Europe, or made by any of the manufacturers in the United States. Respectfully Yours, GEORGE WIEGAND, Inspector of Gas Fittings, Philadelhia.





THE AMERICAN SUBMERGED PUMP,

OWNED BY THE AMERICAN PUMP MANUFACTURING CO., NEW YORK.

OFFICE, No. 40 DEY STREET.

ITS ADVANTAGES.

This valuable Invention, now first intooduded, will, it is believed, supersede all clases for any purpose in use at the present time.

FIRST.—SIMPLICITY. The entire pump is composed of but six parts, all of cast-iron, which can be put together by any mechanic.

SECOND.—DURABILITY. From the fact that it is always submerged, it is perferctly lubricated, and requires no packing As no water can remain in the pipe when not in motion, there is no danger of freezing.

THIRD.—CAPACITY. It is contended that, for the power applied, this Pump excels all others. The No. 1 (the smallest size,) of this Pump, with the power of one hand, has a capacity of thirty gallons per minute, and will throw a stream seventy feet in the air.

FOURTH.—CHEAPNESS. For economy, this Pump surpasses all others, its first cost being about one-third less than that of other Pumps of the same capacity, and being much less both in size and weight, there is a great saving in transportation.

ITS USES.

FIRST.—For a House Pump; the smallest size of the patent Submerged Pump is sufficient for all family purposes. Placed in a well or cistern, water may be con veyed to every room in a common sized house.

SECOND.—For a Farm Pump; for all purposes connected with irrigating, watering stock, etc., etc. This Pump can be placed in running streams, ponds, bayous, etc,, and water conveyed to any required distance.

THIRD.—For a Ship Pump; Any ship owner or captain, with short experience in the use of this Pump, will give his unqualified approval for ship purposes, either to be used as a bilge pump simply, or for washing decks, etc. From its simplicity, as a bilge Pump it will be found entirely free from choking, and will clear grain, dirt, stones, etc., with ease.

FOURTH.—For a Factory Pump, or for air in Oil Wells, for Breweries, or for pumping acids, hot liquors, etc., it is invaluable. It cannot be affected by any liquid.

FIFTH.—To all Directors and Officers connected with mining interests, the PATENT SUBMEAGED PUMP presents great advantages.

The experience of the last five years have clearly proved at what great expense, both in first cost and freight, it has been necessary to be at to secure the proper means of expelling water from the mines, quarries, etc. With this Pump an immense saving is effected in both instances, as in first cost it is much less than other Pumps of the same capacity and power.

Its princeple is that of a Double-acting Force Pump, with a heavy double-acting piston cast in one piece, and a double-acting iron valve within the same, without the use of leather valves or any packing whatever.

RECOMMENDATIONS.

Office of the American Ship Building Company, New York, Oct. 24, 1864.

I am very much pleased with the economy and simplicity of the American Pump, which I have examined with much interest. IT IS ADMIRABLY ADAPTED FOR SHIP PURPOSES, and from its GREAT POWER would do incalculable service in the event of LEAKAGE. It also works well in pumping, where the cargo consists of grain in bulk, and is free in its action.

AUGUSTUS WALKER, Marine Constructor.

New York, October 26, 1864.

To the American Pump Manufacturing Co.:

I have examined with much interest the working and results of the Double Action Force Pump which you are introducing in the market. For use as a Ship Pump and for Mining purposes, I consider it of great value, the results far exceeding anything of the kind presented to my observation, particularly for its GREAT POWER and SIMPLICITY. It will give me pleasure to recommend its introduction into the Navy. Please deliver as soon as possible the Pumps ordered by me last week, for the Mines of the Middlefield Fire and Building Stone Company of Massachusetts, and oblige, Yours, respectfully, CHARLES B. STUART, Consulting Engineer, U. S. N.

Office of the Neptune Iron Works, New York, February 6, 1865.

the American Pump Manufacturing Co.:

I was very much impressed in examining the Pump manufactured by your Company. The originality of the design is in good keeping with its simplicity of construction—certainly very desirable qualities in all mechanical combinations. The extensive demand is the best proof of the popularity and favor it is receiving from the public. I have no hesitancy in recommending it to the inspection of those wishing THE BEST PUMP in the country.

CHARLES HUBBARD, Jr.,
Superintendent.

Office of Donald McKay,
East Boston, Aug. 15, 1865.

Alvin Walker, Esq., Sec. American Submerged Pump Co

DEAR SIR:—In answer to your request for my opinion of your Patent Submerged Pump, will say, that for simplicity, compactness and durability, it has the appearance of being the BEST mechanical combination I have seen, having fitness combined with its simplicity, making it SUPERIOR to Pumps now generally used for general purposes on land. Also, well suited as a Ship Deck Pump, and, in my opinion, can be arranged to be readily used as a good Bilge Pump for Ships.

Yours truly,
HRMAN WINTER

CAMP PAROLE, ANNAPOLIS, Md., April 22, 1865.

Wm. Numson, Esq., President, Baltimore:

DEAR SIR,—The No. 2 Pump has been properly adjusted, and works to our entire satisfaction Hoping you may be successful in introducing it to the public, we remain,

Very respectfully, yours, &c.,
JONES & CROWLEY.

(Letter from the President of Board of Common Council, City of Boston)

Boston, August 10, 1865.

A. Walker, Esq., Sec. American Submerged Pump Co.—

Dear Sir—In reply to your request for the results of the trial of one of your Pumps, I will briefly state the purpose for which it was needed, and the complete satisfaction attained. It was desired to clean out a well 42 feet in depth, in which there stood 10 feet of water; I had previously vainly tried several methods, in one of which one large Force Pump and as many buckets as could be used, succeeded in 10 hours in reducing the depth of the water to 9 feet, but beyond that nothing could be gained. I then put in one of your smallest Pumps, which drained the well completely in Six Hours: although the spring which fed the well yielded a stream of water about as large as a man's arm. I need not say that I consider the Pump fully capable of accomplishing what you claim for it. Yours truly, W. B. [illegible]

I can fully endorse the above statement. [illegible]